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ABSTRACT

Using data gathered in a series of interviews with management and union officials in over 75 companies between 1964 and 1969, this report analyzes the concept of the internal labor market and describes its relevance for federal manpower policy. The management interviews, which were mostly in personnel, industrial engineering, and operations areas of manufacturing companies, were supplemented by data on the disadvantaged provided by civil rights, poverty, and manpower agencies. The report utilizes the framework established in the study to show that the internal market does not imply inefficiency and may represent an improvement in dealing with structural unemployment. (BH)

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Acknowledgements

In this volume we have elaborated the theme of the *internal labor market* that we first developed in our doctoral dissertations completed at Harvard in 1966. This theme of analysis has been reshaped considerably as a result of our subsequent research and advisory activities and by countless discussions and seminars.

We are indebted to an unusually large number of persons who have contributed to our research: to the many managers and union officials who generously devoted their time, and the resources of their organizations, to this study; to members of government and private agencies with whom we have worked in various capacities; and to our friends, associates, and wives who have commented on the project at various stages. In particular, we are grateful to John T. Dunlop who, as teacher and colleague, provided the guidance and challenge necessary to the formation of many of our concepts.

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CHAPTER I

INTRODUCTION

This volume is the outgrowth of a series of labor market studies conducted over the last six years. These studies reflect the variety of policy concerns of the 1960's--structural unemployment, technological change and automation, inflation, racial discrimination, and the employment and training of disadvantaged workers. These problems were initially approached with the traditional analytical tools of economic theory. But, in one way or another, each of the issues strained the conventional framework and required the introduction of a number of institutional or other ad hoc explanations. Reliance upon market imperfections or non-market institutions to explain deviations from the results predicted by conventional economic theory can be, at best, intellectually unappealing. At worst, it neglects, or even masks, variables which are significant for policy. In this volume, a number of these variables are identified and incorporated into a more comprehensive approach to labor market analysis than that provided by the competitive labor market model.

I. The Internal Labor Market

The central concept around which the manuscript is organized is that of the *internal labor market*, an administrative unit, such as a manufacturing plant, within which the pricing and allocation of labor is governed by a set of administrative rules and procedures.[1] The internal market, governed by administrative rules, is to be distinguished from the external labor market of conventional economic theory where pricing, allocating, and training decisions are governed directly by economic variables. These two markets are inter connected, however, and movement between them occurs at certain jobs classifications which constitute ports of entry and exit to and from the internal labor market.[2] The remainder of the jobs within the internal market are filled by the promotion or transfer of workers who have already gained entry to it. Consequently, these jobs are shielded from the direct influences of competitive forces in the external labor market.

The rules governing internal labor allocation and pricing accord certain rights and privileges to the internal labor force which are not available to workers in the external labor market. The internal labor force, for example, has exclusive rights to jobs filled internally, and continuity of employment, even at entry ports, is protected from direct competition by workers in the external labor market. The phenomenon of internal labor markets is thus closely akin to the problems which other authors have identified as "industrial feudalism," "the balkanization of labor markets," and "property rights" in a job.[3]

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[1] John T. Dunlop, "Job Vacancy Measures and Economic Analysis," The Measurement and Interpretation of Job Vacancies: A Conference Report, National Bureau of Economic Research (New York: Columbia University Press, 1966).

[2] See Clark Kerr, "The Balkanization of Labor Markets," in E. Wight Bakke, et. al., Labor Mobility and Economic Opportunity (Cambridge: Technology Press of MIT, 1954), pp. 92-110.

[3] Arthur M. Ross, "Do We Have a New Industrial Feudalism?"

The scope and structure of internal labor markets varies considerably among industries and occupations. The production and maintenance units of a steel plant with their limited entry ports and lengthy promotion lines, the garment factory with many entry ports, the military services, and the exclusive hiring hall in the building trades each constitute a type of internal market. However, because the research upon which this volume is based focussed primarily upon blue collar employment in manufacturing, the concepts and applications presented have particular relevance for this sector.

Enterprise Markets

For blue collar workers in manufacturing, the internal market is generally synonomous with the establishment. While several distinct types of internal labor market structures are found in manufacturing establishments, the predominant pattern appears to be one in which production jobs are arranged in seniority districts or lines of progression. Entry job classifications tend to lie at the bottom of these lines and vacancies in other jobs are usually filled by the promotion of workers from the next lowest job classification in the line of progression.

The criteria governing entry are fairly responsive to external market conditions. Thus the plant's "hiring standards" can vary with the level of unemployment, the wage rates offered by competitors, the characteristics of the local labor supply, and the like. In contrast, promotions to non-entry jobs and layoffs are generally governed by relatively fixed standards of seniority and ability. The particular

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American Economic Review, Vol. XLVIII, No. 5 (December 1958), pp. 914-15, and Frederick Meyers, Ownership of Jobs: A Comparative Study, Institute of Industrial Relations, Monograph Series (Los Angeles: University of California, 1964),p. 11.

standards, and especially the relative weight given to seniority relative to ability, vary from one plant to another. In any given plant they are subject to revision. But they do not change freely with external economic conditions or even in response to variations in the internal supply and demand for labor.

Both the field research and the industrial relations literature indicate that internal markets are by no means limited to blue collar jobs or to manufacturing enterprises, but occur much more broadly in the economy. The parallel to blue collar, manufacturing markets is strongest for managerial employments, where jobs also tend to be organized in lines of progression. Managerial workers enter large corporations as trainees or lower level supervisors. From these classifications their internal career ladders stretch to plant manager or to a series of positions in the corporate management hierarchy.

There are, however, significant contrasts between blue collar, manufacturing markets and those for managerial personnel. There is a tendency of managerial markets to span more than one establishment, frequently including all the plants of a corporation. Other contrasts include the stress placed upon ability in the rules governing promotions, often to the exclusion of seniority, and the provision of an implicit employment guarantee in many middle level management jobs. The latter obviates the need for layoff procedures and reemployment rights which characterize blue collar jobs in manufacture.

Internal markets for other white collar workers also tend to be structured in a vertical fashion with entry jobs and internal promotion. They may follow either the blue-collar or the managerial variant. Markets for clerical workers and technicians tend to resemble the former, while markets for professionals resemble the latter.

Craft Markets

In contrast to the predominant patterns of internal market structures found in manufacturing enterprises are those in the building trades, longshoring, and certain services. These tend to center around the local union, and the geographical and occupational jurisdiction of the local union generally defines the boundaries of the market. The major problems of internal allocation are those of preparing apprentices or trainees to be journeymen and of moving groups of workers of roughly equal skill and rank among jobs of short duration.

The rules governing entry to the craft or occupational type of internal market are more rigid than those found in manufacturing establishments. Those governing internal allocation, however, may be more flexible. They tend to emphasize equality of employment experience among the internal work force somewhat more than the seniority and ability considerations that are dominant in manufacturing. While these occupational internal labor markets predominate where the employment relationship is casual, elements of this pattern can even be found in some manufacturing industries, such as printing, where craft traditions are strong.

Because craft markets contain skills that are utilized in many work situations and because they do not generally contain jobs filled exclusively through internal promotion, it could be argued that they are more directly responsive to competitive forces than are enterprise markets. While the evidence presented in this volume is far from complete, this argument does not seem to be warranted. Within many occupational markets, the pricing and allocating of labor are the subjects of administrative rules, just as they are in enterprise markets. These rules create the distinction between the internal and the external labor force which is so important to the definition of an internal labor market. The administrative rules are, of course, different from those found in manufacturing and respond differently to economic variables. But it is not at all clear from the research that they respond any more readily to economic variables. This, as it will be suggested below, is the determining factor in establishing limits to the application of the construct.

Competitive Markets

~~Finally, it is~~ useful, when discussing internal labor markets, to have in mind some labor market in which the features of the internal market are absent.[4] In the United States there are some jobs which are not contained within well-defined administrative units and for which the process of allocating and pricing occurs in a more or less competitive fashion. The market for migrant labor in California is the paradigm of such a competitive system, but there are numerous other work situations, some requiring considerable skill and others being unskilled, in which administrative rules are either absent or so flexible as to argue against the applicability of the internal labor market concept.[1] It is with such competitive, unstructured markets that the internal labor market should be contrasted.

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[4] It is conceivable that no such market actually exists and that all jobs in the economy lie within the jurisdiction of some set of administrative rules governing the pricing, entry, and internal allocation of labor. It is also possible that industrial economies evolve in the direction of gradually eliminating jobs outside of internal labor markets. Forces tending to work in this direction are suggested in the next chapter.

II. The Internal Labor Market as an Analytical Construct

There is no doubt that internal labor markets, as evidenced by employment situations governed by administrative work rules, are present throughout the economy. Hiring, promotion, and layoff rules which create the distinction between the internal and external labor forces and which govern internal allocation are spelled out in collective bargaining contracts and in management manuals. Similarly, both contracts and manuals contain administrative rules and procedures for the determination of the internal wage structure.

But, the utility of the internal labor market as an analytical construct does not hinge upon the existence of administrative rules. It depends rather upon the rigidity of the rules which define the boundaries of internal markets and govern pricing and allocation within them. If these rules are not rigid, and respond freely to variations in economic conditions, their independent economic role will be minimal. Under such circumstances a preoccupation with such rules will only serve to obscure the operation of underlying economic forces. If, however, the rules are rigid, they will interrupt or transform economic influences so as to cause the internal labor market to respond to dynamic economic events in a manner not readily predicted from conventional economic theory.

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[1] In particular, see supra, Ch. III, p. 1 , and Ch. VIII.

Rigorous proof of the rigidity of the internal labor market in the face of economic forces would require (1) the specification of a set of economic variables which should, in principle, govern the pricing and allocation of labor and (2) a demonstration that the rules which actually govern pricing and allocation are inconsistent with this set of variables. To the extent that there is a coherent labor market theory against which an internal market theory must be tested, it is that derived from neoclassical economic theory. Unfortunately, the requisite measures of neoclassical economic variables are unavailable at the micro-economic level and the administrative rules which govern internal labor markets in practice cannot be defined with sufficient precision to permit quantitative testing of their compatability. As a result, the case for the internal labor market must rest on less satisfactory heuristic evidence.[1]

There are several factors which indicate a rigidity in the rules of the internal labor market. First, many of the rules governing internal wage determination and allocation have survived over a considerable period of time. Longevity is not, of course, equivalent to rigidity since a flexible structure may remain unchanged simply because the forces dictating its existence are constant. In many cases, however, the period over which internal markets have survived is long enough to create a strong presumption of variation in the underlying economic and technical contexts. Internal markets in steel, for example, can be traced to the late nineteenth century. For certain typographical, railroad, and construction crafts, the markets extend even further back in time.[7]

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[1] For one recent attempt at quantitative testing of the internal labor market see Llad Phillips; An Analysis of the Dynamics of Labor Turnover in United States Industry, unpublished Ph.D. dissertation, Harvard University, 1969.

Second, a certain degree of rigidity in the rules governing the internal labor market can be inferred from the comments of both labor and management. Management is particularly vocal about the inefficiencies which the rules generate, and both unions and managements frequently speak of particular rules as if they were not only undesirable but sometimes even beyond the control of the parties to renegotiate them. Such comments suggest that the rules are not consistent with the pricing and distribution of labor which would prevail in a competitive market.

Third, the rigidity of the internal labor market appears to be connected to several phenomena at the work place--investment in enterprise—specific human capital, on-the-job training, and the role of labor as a fixed or quasi-fixed factor of production --which have recently begun to receive attention from economic theorists.[8] These factors have been analyzed in a neo-classical framework yet their effect is to weaken the assumptions of the competitive model and to interfere with the competitive determination of factor prices. Thus they appear to be highly consistent with the postulates of the internal labor market model.

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[7] See for example, Lloyd Ulman, The Rise of the National Trade Union (Cambridge, Massachusetts: Harvard University Press, 1966)

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[8] See Gary S. Becker, Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education (New York: Columbia University Press, 1964); Walter Y. Oi, "Labor as a Quasi-fixed Factor," The Journal of Political Economy, vol. LXX, no. 6 (December 1962), pp. 538-555.

Finally, there is a series of phenomena connected with the psychological behavior of work groups and the process by which customs are formed at the workplace which contribute to certain rigidities within the internal labor market. Through continuing interpersonal contacts with the internal labor market workers appear to develop interdependent utility functions, similar to those postulated in the analysis of consumption and saving patterns.[9] These interdependencies contribute to the formation of relatively fixed customs and traditions with respect to wage structures, promotion arrangements, and other work rules affecting groups of workers.

III. The Internal Labor Market as a Policy Instrument

The internal labor market appears to be a useful analytical device around which to group a series of related precepts which are not comfortably incorporated into conventional models of the labor market. The contrast between the internal labor market and competitive, neoclassical economic theory suggested by the previous discussion, however, should not be overemphasized. Many of the rigidities which impede market forces in the short run are eventually overcome and there is probably a tendency for the economy to adjust over time in a direction consistent with the predictions of competitive theory. Moreover, many of the short-term phenomena associated with internal labor markets could perhaps be incorporated into a suitably modified neoclassical model. For example, even though monopolylike behavior is not necessarily characteristic of the internal labor market, the analysis of such markets is conceptually akin to monopolistic or imperfect competition and could be described in those terms. Nonetheless, such a presentation is not attempted here for two reasons. First, such an approach tends to be understood as a departure from some optimal set of arrangements and thereby tends to connote some inefficiency in the operation of the internal market. Many of the forces which encourage the formation of internal labor markets appear to be inescapable elements of the market behavior from which neoclassical theory abstracts and it is not clear, in the context of these elements, that the internal labor market is either inefficient or suboptimal.

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[9] James S. Duesenberry; Income, Saving, and the Theory of Consumer Behavior (Cambridge: Harvard University Press, 1949).

Second, adherance to neoclassical forms of analysis where possible can be argued on the basis of its presumed generality. When, however, enterprise-specific phenomena are widespread and the circumstances under which they arise easily identified, generality may be obtained only at the expense of relevance and applicability. It is in fact the generality of conventional theory which limits its utility for the analysis of the policy problems noted at the beginning of this Chapter. In this sense, the policy problems under examination in this book provide further analytical justification for the concept. For example, the internal labor market plays a critical role in the recruitment and training of the labor force. Partly from necessity and partly from choice it has assumed many of the responsibilities for labor market information and labor force development assumed to be provided by separate systems in many traditional analyses. By internalizing such functions the internal labor market can select from among a variety of wage and training options in acquiring an internal labor force.

Decisions regarding technological change are also made within the internal labor market. Many aspects of the relationship between technological change, on the one hand, and the training and wage costs of the internal labor force, on the other, can best be understood at the micro level. Technological change, training, and recruitment all affect labor costs and the composition of employment. These factors also play a large role in the process of labor force adjustment to structural change. These adjustment mechanisms in turn affect unemployment and earnings, especially among the less educated and less skilled.

Finally, custom, as a separate force in the internal labor market, has implications for manpower policy. Custom can provide beneficial stabilizing influences; or it can be a process for easing labor force adjustments; or it can be a serious impediment to achieving efficiency or equal employment opportunity. The various effects of custom tend to be balanced in the aggregate, yet they are critical to many internal labor market operations.

These problems are largely microeconomic, in contrast with the aggregate issues of employment, wage levels, and national income which preoccupied economic policy in the three decades preceding the 1960's. The contrast suggests that the utility of the internal labor market as an analytical construct depends upon the level at which the analysis is conducted. For macroeconomic analysis, the administrative features of the internal labor market are treated, in effect, as random events which cancel out in the aggregate. But what is trivial on a macro level can turn out to be central on the micro level, where an understanding of the underlying market machinery is essential.

It is also possible that a recognition of the construct of the internal labor market will point to a new understanding of some of the unsolved macroeconomic problems of the postwar period. For example, it would seem to have particular relevance for understanding the role of the labor market in determining the trade-off between wage stability and full employment subsumed in the "Phillips Curve." Although the potential of the internal labor market for the understanding of aggregate economic problems is not fully explored in this volume, some applications are suggested by the analysis.

IV. Research Methodology

The concepts developed in this volume are derived primarily from a series of interviews with management and union officials in over seventy-five companies during the period from 1964 to 1969. As indicated above, most of the research was done with manufacturing companies, but interviews were also conducted in public and commercial enterprises and in construction and service industries. In most cases, managers from three areas--personnel, industrial engineering, and operations--were interviewed at both the corporate and the plant level. The interviews were open ended, the majority were two to three hours in length with plant visits lasting one or two days.

Because of the extensive nature of the interviews and the sensitivity of the areas of inquiry, considerable cooperation on the part of managers and union officials was required. Personal contacts and cooperation took precedence over a scientific sampling procedure, but an attempt was made to select a heterogeneous group of plants. A variety of industries and labor markets were represented, but most of the establishments were of medium or large size.

These employer and union interviews have been supplemented by contacts with a variety of civil rights, poverty, and manpower agencies. These contacts provided frequent exposure to the disadvantaged labor force and were especially important for those sections of the book dealing with discrimination and low income labor markets.

In addition to the interview materials, program and personnel data were occasionally collected. Some of this data is presented for illustrative purposes but, on the whole, it is too fragmented to support any generally valid conclusions. The results, even when statistically significant, suffer from problems of sampling and statistical design which require caution in their interpretation.

V. The Plan of the Book

In Part One of the book the theoretical concept of the internal labor market is developed. Some of the forces determining internal patterns of labor allocation, wage determination, and training, are also examined. In Part Two, these analytical materials are applied to a series of topics of concern to manpower policy: adjustments to labor market imbalances, technological change, discrimination, and the disadvantaged labor force. Conclusions for manpower policy are offered in the final chapter.

Chapter II

The Origins of the Internal Labor Market

This chapter is devoted to an examination of those forces responsible for the existence of internal labor markets and for the determination of the rules which govern within them. Internal labor markets appear to be generated by a series of factors not envisioned in conventional economic theory: (1) Skill specificity, (2) On-the-job training and (3) Customary law. These factors are defined and developed in the first section of the chapter. In the second section, these factors are combined with the economic forces recognized in conventional theory to develop an explanation of how internal market arise and evolve over time. The analysis of Section II abstracts from the behavior of managerial and trade union organizations and from actual historical events. These institutional and historical complexities are introduced in sections III and IV respectively. The final section of the chapter summarizes the discussion.

I. The Major Factors Generating Internal Labor Markets

1. Skill Specificity

The terms "specific training" and "general training" have been made current in the vocabulary of modern economics by Gary Becker. In Becker's terms, completely specific training is defined as "training that has no effect on the productivity of trainees that would be useful in other firms."[1] "Completely general training increases the marginal productivity of trainees by exactly the same amount in the firms providing the training as in other firms."[2]

In the present volume, _specific_ and _general_ are used in a somewhat different sense. They are concepts which fundamentally relate to _skill_, and to the frequency with which various skills can be utilized within different internal labor markets. Completely specific skill is unique to a single job classification in a single enterprise; a completely general skill is requisite for every job in every enterprise. The terms "specific" and "general" may also be applied to training, as in Becker's usage. Training is more or less specific according to the type of skill which it provides.

Skill specificity has two effects important in the generation of the internal labor market; 1) it increases the proportion of training costs borne by the employer, as opposed to the trainee, and 2) it increases the absolute level of such costs. As skills become more specific, it becomes increasingly difficult for the worker to utilize elsewhere the enterprise-specific training he receives. This reduces the incentive for him to invest in such training while simultaneously increasing the incentive for the employer to make the investment.[3]

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[1] Gary S. Becker, _Human Capital_ (New York: Columbia University Press, 1964) p. 18

[2] _Ibid_.

[3] These results can be stated formally as follows: employers and employees will invest in training so long as the expected return is greater than the expected cost. For the employee, the expected return is equal to the difference between the income on the job to which the investment permits him to aspire and his income in his current job

Skill specificity tends to increase the absolute cost of training, regardless of who provides it, because the less prevalent a skill is in the labor market, the less frequently training for that skill is provided and economies of scale in training cannot be realized.[1] Both of these effects tend to encourage the employer to seek to reduce labor turnover.

Training is not the only labor cost affected by skill specificity. Recruitment and screening costs are affected in much the same way. The reduction in turnover which skill specificity encourages increases the employer's willingness to accept these costs. Similarily, the absolute costs of recruitment and screening are reduced by economies of scale and standardization. Broad scale advertising campaigns and standardized testing procedures, for example, can be used to find and certify workers with skills which are in frequent demand, but these techniques are unsuitable for recruiting and screening workers with less common skills. These scale effects are further encouraged with specificity because it increases the amount of such activities in which individual employers engage.

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weighted by the probability that he will obtain the job to which he aspires. This probability is a decreasing function of specificity. The employer's expected return is equal to the difference in the productivity of the trained worker and the productivity of the untrained worker corrected for any differences in wage rates which result from the training and weighted by the probability that the worker will remain on the job. This probability is also an increasing function of specificity.

[1] The effect of training scale upon absolute training costs may, however, be diminished if the specific skills are widely utilized in the internal market of the employer providing the training.

Although, in the generation and operation of the internal labor market, it is the specificity of skills and training that is the key, it is not always the focus of managerial decisions. Such decisions often center instead upon the job or the technology, and the requisite skills appear to be derived incidentally from these decisions. Because the job and the technology are so often the focal point of the decisions that determine skill, it is useful to define and apply the terms "specific" and "general" to these concepts as well.

Job Specificity

The specificity of a job, as that term is used here, is defined by its skill content. Jobs utilize a set of skills, and each of the skills in the set may be more or less specific. A completely specific job is one which utilizes only specific skills; a completely general job is one all of whose skills are general.[1]

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[1] The reference of the term specificity to skill even when applied to a job, is important. It implies that a job could be unique to an enterprise, in the sense that the set of the skills which it utilized was not required elsewhere, and yet each skill in the set might be quite general. Such a job would not be enterprise specific.

A second source of confusion surrounding the concept of job specificity is derived from the instability in the content of jobs in most enterprises. As will be seen subsequently in the discussion of on-the-job training, the skills and duties associated with a given job vary systematically as part of the internal allocative process, and this, plus the wide variation among enterprises in jobs with similar titles, makes the concept of the job a difficult and elusive one to work with. The concept is, nonetheless, necessary for an understanding of some phenomena. An employer, for example, may be induced to finance the training of the general skills required by a job because he knows that the specific training which the job also requires will minimize turnover.

Almost every job involves some specific skills. Even the simplest custodial tasks are facilitated by familiarity with the physical environment specific to the work place in which they are performed. The apparently routine operation of standard machines can be importantly aided by familiarity with a specific piece of operating equipment. Even mass produced machines each have individual operating characteristics which can markedly affect work performance. In some cases workers are able to anticipate trouble and diagnose its source by subtle changes in the sound or smell of the equipment.

Moreover, performance in some production and most managerial jobs involves a team element, and a critical skill is the ability to operate effectively with the given members of the team. This ability is dependent upon the interaction of the personalities of the members, and the individual's work "skills" are specific in the sense that skills necessary to work on one team are never quite the same as those required on another.[1] There are no true examples of a completely general skill. In an industrial economy, however, generally transferable skills are approximated by basic literacy, by the ability to communicate, and by a commitment to industrial work rules.[2]

The Specificity of Technology

Closely related to job specificity is the specificity of a technology, where technology refers to the entire set of tasks which comprise a work process. A technology, like jobs, utilizes skills of varying degrees of specificity. Technology does not impart specificity to skills so much through the motions of the tasks which it requires as through the speed and accuracy with which they are executed. In most manufacturing enterprises, for example, speed and accuracy of work are considered the critical determinants of labor cost. Both are heavily dependent upon the peculiarities of particular pieces of equipment, the type of materials, the particular product, the length of production runs and the environment in which that product is being produced.

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[1] Edith T. Penrose, The Theory of the Growth of the Firm (New York: Wiley, 1959) and Robin Marris, A Managerial Theory of Capitalism, (New York: Free Press of Glencoe, 1964).

[2] See Clark Kerr, et. al., Industrialism and Industrial Man, (Cambridge: Harvard University Press, 1960).

This, for example, the production of a pair of shoes requires some skilled operators and some skilled equipment repairmen. Similar operating and repair skills are utilized in many labor markets, and it is generally possible to employ new hires as machine operators. But operators familiar with the idiosyncracies of the particular pieces of equipment can produce much faster and are also able to anticipate machine breakdown so as to minimize equipment downtime. Downtime is further reduced when the repair crew is also familiar with the particular equipment so that the trouble can be quickly diagnosed and repaired. These kinds of skills are highly specific in character.

In one way or another every piece of equipment is unique and every technology involves some skills which are specific in the above sense. But specificity can rise above this irreducible minimum, and while its level is influenced by a number of variables beyond managerial control, discussion with managers and engineers suggest that they can exercise some discretionary control.

II.7

A general principle appears to govern many technologies: the greater the variety of tasks a machine is built to perform, the less efficient it tends to be in the performance of any one of them. Since production departments are under continued pressure to minimize costs, the operation of this principle results in the tendency for technology to become increasingly enterprise specific over time. Line supervision, and sometimes operatives and maintenance crews as well, are forever modifying equipment in order to improve its efficiency. Such changes accumulate quickly and can produce considerable movement toward specificity.

Countervailing pressure against specificity is generated by the savings in fixed capital costs and fixed labor costs associated with standardized equipment which can utilize widely available skills. Economies of scale in production generally makes such equipment cheaper than custom made machinery. The availability of standardized parts reduces repair and maintenance costs and the need for spare parts inventories. Standardized equipment also tends to reduce the cost of adjusting to changes in the composition of demand.

Specific technologies are also less apt to be formally described in blue prints, operating instructions, or repair manuals. This occurs for several reasons. First, technologies often become specific through a long series of minor changes in initially standard equipment, each of which is too trivial to warrant recording. Second, many of the factors which make machinery and jobs idiosyncratic, such as the sounds and smells of equipment, are extremely difficult to describe formally.

Finally, there are fixed costs of developing and maintaining detailed written instructions and designs. If this investment cannot be spread over many pieces of equipment, it is less likely to be undertaken. When not formally recorded, the technology exists only in day-to-day operations and in the skills required tend to be the unique possession of the internal labor force. This in turn enhances further the importance of the internal labor force as a stable and self-perpetuating body and thus fosters rigidity in the rules governing internal training.

2. On-the-Job Training[1]

The second factor critical in the development of internal labor markets is the process of on-the-job training. In the past, economists have tended to ignore this phenomenon altogether. Economic theory, when it has considered training at all, has assumed that it occurs in a formal educational institution which is implicitly treated as a part of a separate educational industry. There has been a recent upsurge of interest in on-the-job training, but analysts have viewed such training primarily as a shift in the locus of the educational process and in the distribution of training costs.[2] Very little attention has been paid to the training process and its effect upon the establishment in which it occurs. It is the process, however, which is important in understanding internal labor markets and which is examined in this section.

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[1] Much of the material in this subsection appeared initially in Michael J. Piore, "On-the-Job Training and Adjustment to Technological Change," The Journal of Human Resources, Vol. III, No. 4 (Winter 1968), pp. 435-449 and Peter B. Doeringer and Michael J. Piore, "Labor Market Adjustment and Internal Training," Proceedings of the Eighteenth Annual Meeting, Industrial Relations Research Association, New York, December 1965, pp. 250-263.

[2] See for example, Richare S. Eckaus, "Economic Criteria for Education and Training," Review of Economics and Statistics, Vol.XLVI, May 1964, pp. 181-190; Kenneth J. Arrow, "The Economic Implications of Learning by Doing," The Review of Economic Studies, Vol. XXIX June 1962, pp. 155-173; Jacob Mincer, "On-the-Job Training: Costs, Returns, and Implications," Journal of Political Economy Supplement, Vol. LXX, No. 5 Part 2, October 1962, pp. 50-79; Walter Y. Oi, op. cit.

By far the largest proportion of blue collar job skills are acquired on the job.[1] Such training appears relatively less important for white collar professional and managerial jobs where formal education attainment requirements tend to dwarf skills previously acquired on the job.[2] But even for these positions, formal education is often used more as a screening device for selecting people with certain aptitudes and social backgrounds. On-the-job training then provides either the larger proportion of skills actually utilized in the performance of work or is a prerequisite for the successful utilization of formal education.[3]

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[1] See U.S. Department of Labor, "Formal Occupational Training of Adult Workers," Manpower/Automation Research Monograph No. 2, December 1964, Table 11, pp. 43-45. See also U.S. Department of Health, Education, and Welfare, Office of Juvenile Delinquency and Youth Development," Getting Hired, Getting Trained (Washington: U.S. Government Printing Office, 1965); National Manpower Council, A Policy for Skilled Manpower (New York: Columbia University Press, 1954), pp. 208-233; and Department of Labour, Canada, Acquisition of Skills, Research Program on the Training of Skilled Manpower, Report 4 (Ottawa: Queen's Printer and Controller of Stationery, 1960). George Strauss's study indicates that the training of construction craftsmen is often equally informal; see "Apprenticeship: An Evaluation of the Need" in Employment Policy and the Labor Market, Arthur M. Ross (ed.) (Berkeley: University of California Press, 1965).

[2] Ibid.

[3] See Lester C. Thurow, "The Occupational Distribution of the Returns to Education and Experiences for Whites and Negores," in Federal Programs for the Development of the Human Resources, Papers submitted to the Subcommittee on Economic Progress of the Joint Economic Committee, U.S. Congress (Washington, D.C.: Government Printing Office, 1968), Vol. I, pp. 267-284.

For blue collar manufacturing jobs, the hallmark of on-the-job training is its informality. The process is variously described as "osmosis," "exposure," "experience," or "working one's way up through promotion." Very often, on-the-job training is not recognized as a distinct process at all: it is simply assumed that a worker who has "been around" for a while will know how to do certain things. For relatively simple operating jobs, new workers are typically given a brief job demonstration. They then begin to produce on their own, receiving occasional help from foremen or neighboring operators. On more complex jobs, particularly those involving maintenance or repair, the novice may serve as an assistant to an experienced employee. In other cases, training takes place along a promotion ladder in which work on the lower level jobs develops the skills required to learn the higher level, more complex skills. Workers may also learn other jobs by observing their neighbors and by practicing on, or "playing around with," equipment during lunch hours and other production breaks. Learning often occurs by observing neighboring workers without them being aware of what is going on. Sometimes even the trainee is not conscious of the learning process. Thus, even where the jobs within a department are not skill related, the ability to perform them is correlated with the length of time the worker has "been around."

The informality of on-the-job training makes it difficult to identify the precise nature of the process, but the following elements appear to be involved. First, the training typically occurs in the process of production, partly through practice and partly through trial and error. It is the production process that disciplines the learning process and provides indications of success and failure. Both monetary and psychological rewards and penalties stimulate the mastering of the production skills.

Second, when instruction of one kind or another is required, it is usually provided by a supervisor, by the incumbent worker, or by workers on neighboring jobs. The experienced workman deliberately demonstrates new tasks to novice workers; a superior may delegate a portion of his tasks to a subordinate; or the subordinate may, after brief instruction, fill in for his superior during temporary absences. In all cases, the "instructor" generally continues to discharge his productive responsibilities. The participants in the training process therefore assume dual roles: one in the production process, as supervisors or subordinates, the other in the learning process, as instructors or students.

Third, the very process of on-the-job training tends to blur the distinction between jobs. In many respects, on-the-job training might best be described as one of a rolling readjustment of tasks between experienced and inexperienced workmen. The experienced workman begins by assigning novices the simpler parts of the jobs which he originally performed. He then gradually assigns more complicated tasks connected with teaching and supervision. As the workman shifts more complex tasks to the trainee, he also reduces his supervisory and teaching efforts, and reabsorbs some of the simpler tasks to allow the trainee time to master the complex work. Somewhat the same thing occurs when on-the-job training occurs through temporary assignments to the job of the experienced workman. The novice performs the routine aspects of the work and the more complex tasks are either performed by a superior or are postponed until the experienced man returns.

In all of these cases, the formal distinction between one job classification and another is maintained. Work assignments are referred to as temporary or permanent and different wage rates are attached to the jobs. But the wage rates and the job definitions tend to be somewhat arbitrary. They are artificial distinctions, imposed upon a situation where one job merges into another and where the skills acquired and the tasks performed are continually changing in subtle ways. For example, screw machine operators may normally perform set-up and minor maintenance tasks on four or five machines. When a "green hand" is hired, the skilled operator may assume set-up and maintenance responsibilities for seven or eight machines. The trainee will observe the operation of these machines, and keep the tool bit clean and oiled. Gradually the trainee will absorb the more complex tasks and operate more machines until he is weaned from his reliance upon the experienced worker, except for an occasional problem.

Sometimes training in manufacturing plants is described as "formal." But, in many cases, this involves little more than a systemization of informal procedures which leave the underlying nature of the training process unchanged. For example, vestibule training, which is usually called formal, often involves the development of a separate production facility where the slower pace of new workers does not interfere with the operation of experienced personnel. Another example is maintenance apprenticeship programs occasionally offered in manufacturing plants. These programs are described as formal, but the classroom portion is secondary to training on the job. The formal dimension of the on-the-job training often involves little more than a systematic rotation of the trainee through enough job classifications to ensure exposure to the full complement of tasks which craftsmen are expected to perform. Similar managerial arrangements are utilized for training college graduates entering large corporations and for medical interns.

The prevalence of on-the-job training appears to be associated with several different factors. These factors, because they determine when on-the-job training occurs and also because they may influence other aspects of the work environment, are worthy of note. First, for certain jobs, there is no alternative to training on the job. These jobs exist only as work performed and cannot be duplicated in the classroom. Incumbent employees have difficulty describing or demonstrating the skills they possess, except in a production context. In some cases they also have a strong incentive to hide what they do from management who might use this knowledge to abstract greater output from them or to correct a loose incentive rate. Hence, managers find it impossible to develop a formal curriculum which might be taught in classrooms and must rely, by default, upon a teaching technique in which skills are directly transmitted from the job incumbent to his replacement.

Because so much of the learning process is automatic, and because it relies upon the individual's curiosity about what goes on around him, and his desire to master a job for its extrinsic and intrinsic rewards, it tends to seem "natural" in the eyes of both management and workers. Such training also seems costless and little attention is paid to the training process. Moreover, managers can often capitalize on the natural learning process by breaking technological processes into jobs, and arranging the physical proximity of workers so as to increase the amount of automatic learning which occurs. One example of this is the promotion unit: each job in the progression line develops skills requisite for the succeeding job and draws upon the skills required in the job below it.

It should be emphasized, however, that not all on-the-job training is in fact free. The process frequently involves material wastage, machine damage, reduction in product quality, and sacrifices in the productivity of both the trainee (whose attention is diverted from his current job to that of a neighbor or superior) and the instructor who becomes preoccupied with training and supervising his subordinates. These costs are difficult in practice to separate from the costs of production, but virtually all managers are aware that they exist.[1]

Some of the resources absorbed by the training process, moreover, might otherwise be wasted. Such is the case when the novice learns by playing around with idle equipment during a production break, when scrap material is used to demonstrate a new technique, or when the instruction is provided during lulls in the production process when workers would otherwise be resting. Frequently the best learning situation coincides with the most efficient staffing arrangements. Subordinates, for instance, often learn by filling in during the temporary absence of their superiors. The subordinate might not perform the job as efficiently as the experienced workman, but the arrangement may still be less expensive than the alternative of having redundant experienced replacements available to substitute for skilled workers during unexpected absences.

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[1] The presence of such costs does not necessarily deter on-the-job training. Given the automatic character of the learning process, it may be impossible to prevent these costs. Where training alternatives exist, they may be even more costly to operate.

On-the-job training may be more economical than formal instruction in several other respects as well. Because on-the-job training is derived from the content of the job itself, it is confined to only those skills required for the job and involves no excess training. Since much of the training takes place through demonstration, rather than verbal communication, persons incapable of teaching in the classroom can serve as instructors. When the number of trainees required at any given time is small and the training period short, the economies of scale provided by classroom instruction cannot be obtained. The cost of on-the-job training is further reduced by the output produced by trainee which is unavailable when training is conducted outside the plant.

Even when more costly, on-the-job training has certain advantages over classroom instruction. Instruction on the job is individual and is automatically tailored to the learning capabilities and peculiarities of each trainee. Moreover, the relevance of the instruction is immediately apparent, which tends to make the trainee a more attentive student. Vestibule training, which is occasionally used for blue collar jobs in manufacturing, represents a compromise between on-the-job training and formal classroom training. Such programs, only partly prepare a worker for job performance despite attempts to simulate work conditions.

As should be apparent from the preceding analysis, on-the-job training is closely related to skill specificity. Specificity tends to promote on-the-job training by reducing the number of people learning a particular skill at a given time. By precluding large scale, standardized training, formal instruction is discouraged. Moreover, to the extent that skill specificity leads to unrecorded knowledge, it necessitates the process of direct skill transmission from incumbent to successor in the process of production, the essence of on-the-job training.

The relationship between skill specificity and on-the-job training, however, runs in both directions. The narrowness of on-the-job training, which makes for training economies, makes the skills which it produces highly specific to the context in which they were acquired. Reliance upon on-the-job training also encourages the mutation of technology in the direction of increasing specificity. Skills change over time as they are transferred from one worker to the next. Since instruction does not depend upon formal records or the use of skill developed by formal classes, there is little incentive to maintain standard jobs. Operators and repair crews are allowed latitude to modify equipment on their own and innovations are frequently introduced on the plant floor by engineers and supervisors without written record.

3. Custom

Custom is the third of the major factors important to an understanding of internal labor markets. Its role in economic activity has only occasionally been recognized by economists, most frequently in discussions of wage relationships. But it is generally used as a residual explanation, one which is used as a catch-all to account for events which cannot otherwise be explained.[1] Economists have not attempted to define the concept of custom precisely or to explain when it is generated and how it might be changed.[2]

Custom at the work place is an unwritten set of rules based largely upon past practice or precedent. These rules can govern any aspect of the work relationship from discipline to compensation. Work customs appear to be the outgrowth of employment stability within internal labor markets. Such stability, it will be seen below, is of value to both the employer and the work force and one of the factors producing internal labor markets is the desire to effectuate stability. When employment is stable, the same workers come into regular and repeated contact with each other. The result of these contacts is the formation of social groups or communities within the internal labor market. Communities of this type--in a work place or any other social setting--tend to generate a set of unwritten rules to govern the actions of their members and therealtionship between members and outsiders. Eventually, these rules assume an ethical, or quasi-ethical aura. Adherence to these rules tends to be viewed as a matter of right and wrong and the community acts to retaliate against behavior which is at variance with it. It is to such rules that the term "custom," as it is used in this volume, applies. The generation of custom in the internal labor market closely resembles the development of customary law in medieval Europe and both appear to be the product of the psychological behavior of groups.[1] Indeed, the feudal manor, to which medieval custom has reference, can be viewed as a self contained internal labor market.

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[1] See, for example, J. R. Hicks, *The Theory of Wages* (London: Macmillan and Co., 1963), especially pp. 316-319. J.S. Mill, *Principles of Political Economy* (New York: Longmans, Green, and Co., 1926), pp. 242-248. More recent examples can be found in L.G. Reynolds, *Labor Markets and Labor Relations* (Englewood Cliffs: Prentice-Hall, 1968), p. 509; and George W. Taylor and Frank C. Pierson, (eds.), *New Concepts in Wage Determination,* pp. 117-172.

[2] Considerably more work has been done in this area by sociologists, legal historians and psychologists. This section draws heavily upon articles by Edwin Sapir and Charles S. Lambinger in *The Encyclopedia of Social Sciences* (New York: MacMillan Co., 1931), Vol. IV, pp. 658-667, and Marc Bloch, *Feudal Society*, L. A. Manyon (Trans.) (Chicago: University of Chicago Press, 1963). Vol. I, pp. 113-120. The connection between legal behavior and economic behavior is suggested by Justice Douglas in the Supreme Court's opinion in *United Steelworkers of America vs. Warrior and Gulf Navigation Co.* (363 U.S. 574 (1960)).

The existence of customary law at the work place is indicated by the "ethical" phrases which appear in the language of industrial relations: "just cause for discharge," "equal pay for equal work," "a fair day's pay for a fair day's work," and so forth. At each work place, the vague terms "just," "fair," and "equal" are given meaning largely by past practice and precedent. Workers who violate the code are subject to discipline, either by supervision or by their co-workers. For example, fighting or drinking at the work place may result in a discharge or suspension by management; exceeding output norms which the internal work force has determined as "fair" may result in verbal abuse by the work group, or in the extreme, being "sent to coventry" or being subject to sabotage and physical harm.

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[1] See Bloch, *op. cit.*

Customary law is of particular interest in the analysis of internal labor markets both because of the stabilizing influence which it imparts to the rules of the work place and because the rules governing the pricing and allocation of labor within the market are particularly subject to the influence of custom. Rules that are the subject of custom become constrained and less responsive to market forces, thereby explaining much of the apparent rigidity of internal wage and allocative structures. The central question posed by this phenomenon is how customary laws at the work place can continue to command allegiance in a context where institutional survival is dependent upon economic success?

The ultimate sanctions upon the operation of custom are indeed economic. For example, the willingness and ability of the internal labor force to punish management's violations of custom operate through economic pressure, the extreme form of which is the strike or sabotage. Short of such extreme action, however, a dissatisfied internal labor force can harass management in a variety of ways--reduced work pace, "misplaced" tools and materials, epidemics of minor equipment breakdowns, increase in defective outputs, and minor infractions of rules too small to punish individually.[1] Such minor, unorganized economic harassment, for which it is impossible to pinpoint responsibility, is the form of economic pressure which managers appear to fear most from violations of custom. Adherence to work customs may also have its costs. Where customs are in conflict with economic efficiency and fail to adjust so as to resolve this conflict, economic constraints begin to affect profits, wages and employment. The ultimate sanction against custom is economic failure.

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[1] See, for example, Stanley B. Mathewson, Restriction of Output Among Unorganized Workers (New York: The Viking Press, 1931).

Managerial adherence to work customs cannot be understood, however, in purely economic terms.[1] To a certain extent, management, especially lower level management, belongs to the work group and abides by custom for the same reasons that other group members do so: because it cannot conceive of alternatives, because alternatives that are conceivable are discomforting and seem wrong, or because it fears the sullen hostility of the work force and the social ostracism that it implies. Custom is thus a direct influence upon management decisions as well as a constraint.

The most important factor in understanding the relationship between custom and economic efficiency, however, is not the pressures, social or economic, that the group generates in its behalf, but the character of custom itself. Here the operation of custom can best be illustrated by reference to medieval European society. Bloch, for example, emphasizes (1) the dependence of customary law upon past practice and (2) the fact that customary law is essentially unwritten.[2] Both characteristics he suggests give considerable flexibility to custom.

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[1] John T. Dunlop, Industrial Relations Systems (New York: Henry Holt, 1958).

[2] Bloch, op. cit., Vol. I, pp. 2-12.

Dependence upon "past practice" means that any procedure, if repeated, becomes customary. Hence, a new practice, even if it initially countervenes the customary procedure, will eventually supercede it if it is repeated sufficiently often. Dependence upon memory to recall practices which have not been recently applied also facilitates change. To quote Bloch, "The human memory...is a marvelous instrument of elimination and transformation...especially what we call the collective memory."[1] People remember past practice selectively, and individual recollections may conflict. Moreover, since even repetitive events differ slightly, the applicability of a given practice to a current event is usually ambiguous, or past practices having differing implications may seem equally relevant.[2]

This characterization of custom makes it an essentially passive phenomenon which tends to grow up around whatever exists. It implies that a work place begins essentially as a tabula rasa without work rules. Management, at least in non-union enterprises, is free to establish whatever set of work rules are most conducive to economic efficiency. Once they are established, custom begins to form around them through the process of application. If underlying economic conditions are stable, no conflict between efficiency and custom will emerge, and custom will not be recognized as a separate force. It is only if the initial economic conditions change and the customary procedures become inefficient that conflict arises.

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[1] Ibid., Vol. I, p. 114.

[2] See Richard P. Mc Laughlin, "Custom and Past Practice in Labor Arbitration," Arbitration Journal, vol. 18, no.4, 1963, pp. 205-228.

In the face of such a conflict, management can attempt to shift the customary practice toward the efficient practice by relying upon the ambiguity of past practice. If the requisite ambiguity is not present, management might accept the cost of the inefficient practice as being less than the cost of change. Or, it might introduce the new practice, relying on the ability of repetition to establish new custom and hoping that any reaction by the labor force will be of short duration.

The description of work customs as an essentially passive outgrowth of procedures initially determined purely by efficiency needs to be modified in one important respect. Certain customs are imported by the work group from the larger community in which it resides. They are sanctioned by outside social groupings, and workers who rise to their defense do so as members both of the narrow work group and of extended social groups outside the enterprise. Even in a new plant, management cannot violate widely held customs without encountering the pressure of worker dissatisfaction. Nor can it easily supplant them with new customs simply by repetition of an alternative. Indeed, some procedures, such as considering seniority in promotion and lay-off, can become so embedded in custom outside the plant that they are exceedingly difficult to change.

The tendency of individuals to form the types of social groups which generate these customary laws is rooted in certain basic principles of group and individual psychology that can only be briefly sketched here. What we have described as group custom appears to be the aggregate of habits common to the individuals comprising the group.

Habits are patterns of behavior which individuals develop through a conditioning or reinforcement process in which the behavioral pattern is repeatedly associated with a reward. The classic examples of conditioning are the Pavlovian experiments.

The strength of a habit is defined as its ability to survive in the face of a destructive process in which the habit is not reinforced for long periods, or is even punished. Experimentation with animals indicates that habit strength is a function of the frequency and pattern of reinforcement and of the interval between reinforcements.[1]

Early experiments emphasized reinforcement derived from basic physical needs such as food and sex, and most psychologists believe that all habits are ultimately related to needs of the kind. But once a habit is established, it can, in turn, become a reinforcing experience because it is symbolically associated with basic rewards. Such habits are called secondary reinforcers. They are divorced from primary needs and may generate further habits. It is secondary reinforcement that appears to be central to the development of custom.

One of these secondary reinforcers is the habit of imitation. Individuals learn in early childhood that the imitation of those around them is rewarded. Since imitation constitutes a successful means of adaptation to the environment, it eventually becomes an independent mode of behavior. In a group situation, imitation clearly facilitates the development of modes of behavior common to the members of the group. For many individuals, the habit of accommodation to a group situation is in itself a secondary reinforcer. This leads them more or less automatically to accept the norms of the groups to which they become attached and encourages them to impose group norms upon others. Group habits therefore become reinforced by both the frequency of repetition and by the sense of reward which members experience.

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[1] See Ernest R. Hilgard and Donald G. Marquis, Conditioning and Learning, Second edition, revised by Gerald Kimble (New York: Appleton-Century-Crofts, 1961), Century Psychology Series.

The relation between custom and habit implies that it is possible to apply learning theory to identify a set of variables which determine the ability of a custom to persevere in the face of contrary economic pressures. Among these variables is the number of times which the practice has been repeated and the interval between repetitions. Also included would be a series of variables governing the effectiveness of secondary reinforcement mechanisms. Homogeneity in the work group tends to facilitate the development of custom, since a diverse group will offer many competing habits for its members to imitate. Similarly, the stability of the group will facilitate the development of custom, as new members will tend to dilute group behavior, at least temporarily, until they have been assimilated into the group.

Finally, it is worthwhile to note that the behavioral phenomena from which custom derives are collectively called "learning theory," and that this theory is often used to analyze various kinds of "training." This implies that the process through which custom is generated at the work place is closely related to the development of job skills. On-the-job training, for example, depends heavily upon individual habits formed by a set of reinforcements generated by the productive process, on the one hand, and through the imitation by inexperienced workmen of neighboring employees on the other. The latter effect is essentially what is meant by the terms "osmosis" and "exposure" by which the training process is so frequently described. Some skills and habits required for successful job performance are, in fact, group customs, and the development of these skills is facilitated by the social cohesion and group pressure which enforces customary law.

This suggests that internal markets may be especially effective for training precisely because they become social institutions. But it also suggests that social variables may be particularly important in the economic performance of individuals within such markets. This, it will be seen in later chapters, has important implications for remedying discrimination in employment and for developing policies to facilitate the employment of disadvantaged workers. Furthermore, learning theory and the role of groups in the formation of both individual preferences and customary law are critical to the process of internal wage determination.

II. The Process of Internalization

While skill specificity, on-the-job training, and custom appear to be critical factors in the generation of internal labor markets, they do not operate alone. Rather, they work in combination with those forces recognized in neoclassical economic theory. An understanding of the origins of internal labor markets can be approached through the canons of conventional theory. The procedure adopted in this Section is to postulate an unstructured, competitive labor market in which there is no commitment to a continuing employment relationship, but in which skill specificity, on-the-job training, and custom can develop. The analysis is then directed at identifying and examining the circumstances under which the competitive market will be led to internalize the market functions of pricing and allocation.

To simplify this exercise, it is assumed that internal labor markets are initiated solely at the discretion of management and that managers seek to minimize their labor costs. It follows from the latter assumption that jobs will be awarded to workers on the basis of their costs and qualifications--the employer offering the job to the lowest bidder unless the higher price of a competing worker is compensated for by higher productivity. Likewise, workers will seek to sell their services to the highest bidder. This competitive market procedure will be replaced by internal labor market arrangements only if costs are thereby reduced. Three kinds of costs considerations appear to militate in favor of internal markets: (1) the value of such markets to the labor force, (2) the cost of labor turnover to the employer and the role of such markets in the reduction of turnover, (3) the technical efficiencies of an internal labor market in the recruitment, screening and training of labor.

1. Value to the Labor Force

The comments of workers and union officials suggest that the members of the labor force place a positive value upon internal markets. To the extent that they do so, they should be willing to sacrifice earnings to acquire and retain employment in such markets. The savings implied by these wage sacrifices should act in turn as an inducement to management to internationalizing pricing and allocation. The size of the savings, and the strength of the resulting inducement will depend upon the variables governing the value which workers place upon internal allocation.

The benefits which workers receive drom internal labor markets appear to derive primarily from the enhanced job security and chances of advancement available within them. Wages sacrifices necessary to attain access to an internal labor market thus represent a trade-off between present and future income. As such, they should be responsive to such variables as the time horizon of the labor force and the rate of discount between present and future income, increasing as the former expands and the latter declines. The acceptable sacrifice should also be affected by the prevalence of other arrangements which ensure against economic insecurity, and internal markets may thus be viewed as a substitute for public or private pension and unemployment insurance programs. The size of the acceptable wage sacrifice will also depend upon broader variations of income and employment, being greater in periods of recession than in periods of prosperity and in industries with strong seasonal and cyclical fluctuations than in those with stable labor demand.

A secondary factor augmenting the value of internal markets to the work force is their association with equity and due process. The rules which govern internally are thought to effectuate standards of equity that a competitive market cannot or does not respect. The standards at stake include not only the criteria upon which pricing and allocative decisions are made, but also administrative procedures such as union grievance procedures and managerial "open door" policies through which these criteria are applied and reviewed. The value of equity does not appear to vary with any obvious set of economic variables such as those governing the value of security and advancement. It is, however, connected to the phenomena of customary law, to the political dynamics of trade unions, and to problems of managerial control.

In principle, internalization of market functions can also yield an indirect benefit to the labor force: the opportunity to share in the savings in recruitment, screening, and training costs generated by internal markets. These benefits, however, do not receive much attention in the comments of workers in manufacturing. In construction, on the other hand, where the casual nature of employment requires frequent job changes, workers are much more conscious of these benefits.

2. Turnover and Turnover Reduction

An effect of internal markets upon labor turnover follows from the fact that such markets are valued by the labor force. Because they are so valued, turnover requires some sacrifice of the part of the work force, and this sacrifice should act as a deterrent to movement.

Further turnover effects result when, as is common for blue collar manufacturing workers, the amount of security and advancement which the market affords is made a function of length of service. The employer can then assign to his most senior workers those jobs for which the cost of turnover is greatest.

The impact of a given change in turnover patterns upon the incentive to institute an internal market depends upon the relationship between turnover and cost. In traditional economic theory, turnover has no cost. Labor is treated as a variable factor of production, and employers are assumed to hire their work force by the hour or by the day at an hourly or daily rate. Turnover begins to carry a cost only when labor becomes, to borrow OI's term, a quasi-fixed factor of production.[1] Labor, then, takes on some of the properties traditionally attributed to capital, and management incurs costs if a worker leaves and must be replaced irrespective of the time worked. Such costs are of two kinds: the cost of replacement and the cost of termination.

There are three major components of replacement cost: (1) recruitment, the cost of attracting job candidates; (2) screening, the cost of assessing the qualifications and attributes of candidates; and (3) training, the cost of raising the performance level of a newly hired or promoted worker to that of his predecessor. As was seen in the preceding section, the primary reason for the employer encountering these costs is skill specificity. As skill specificity increases, it becomes less likely that workers possessing the required skills will be available from the external market. Consequently, for any given level of skill, specificity results in an increase in the absolute level and proportion of training, screening, and replacement costs incurred by the employer.

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[1] Walter Oi, Op. cit.

The second aspect of turnover costs, the costs of termination, can also fall on both workers and employers. As indicated earlier, workers experience costs of job search and job replacement and therefore seek to limit the employer's freedom to initiate terminations. By placing constraints upon the conditions under which discharges or layoffs can occur, hiring decisions cannot be easily reversed, and a premium is placed upon careful (and expensive) screening of job applicants. Managers claim that union restrictions upon discharge and formal grievance procedures are a major deterrent to employer initiated termination.

The termination costs experienced by employers are largely the product of employee insurance and benefit programs. Some of these--severance pay and unemployment insurance, for example--are deliberately designed to impose termination costs. Other costs appear to be an incidental result of the method by which the benefits are financed. The ceiling on the social security tax base, for example, makes it expensive to terminate an employee whose cumulated earnings exceed the ceiling if he is replaced by someone whose earnings have not.

Certain insurance programs--both public and private--increase replacement, as well as termination, costs by shifting the cost of some economic contingencies from the employee to the employer. The employer then has an incentive to avoid high risk workers and screens job candidates even more carefully. It can also result in more extensive recruitment efforts to find acceptable candidates and, occasionally, in the development of specialized training programs, such as health and safety education, which attempt to reduce insurable risks.

3. Technical Efficiencies in Recruitment, Screening and Training

In addition to the effects of recruitment, screening and training upon turnover costs, the efficiency with which these functions are performed internally also encourages the development of internal markets. The efficiency of internal recruitment and screening derives from the fact that existing employees constitute a readily accessible and knowledgeable source of supply whose skill and behavioral characteristics are well known to management. Information about internal candidates is generated as a by-product of their work history in the enterprise. Supervision has an opportunity to observe the subtleties of the candidate's personality and the ease with which he adapts to new skills. Management also has a record of his attendance, punctuality, and willingness to operate within established work norms.

In contrast, potentially interested outsiders must first be located and screened. Detailed information on work performance can be gathered for external candidates through extensive testing and reference checks. The problem of identifying the variables which will completely predict a new hire's work performance, however, is generally viewed as either insoluble or soluble only at a prohibitive cost. Outsiders must also be provided with information about the work place and must learn to assess this information. The internal work force will already have accomplished much of this process by drawing upon its own experience and that of a network of friends among the incumbent employees.

The advantages of internal screening and recruitment may be outweighed by factors operating in the other direction. The internal labor force may be less qualified than externally available workers and the cost of training may more than absorb the savings generated by internal recruitment and screening. Internal promotion may simply transfer the vacancy to another job where the cost of external recruitment and screening is equal or greater than for the original vacancy. The extent to which these factors are controlling varies among industries and occupations, but the prevalence of both is reduced by the nature and efficiency of on-the-job training.

As was seen in the preceding section, training on the job is heavily dependent upon the natural curiosity of people about what is going on around them, the desire to show off to others what they are doing, and the reinforcement value of imitation.[1] Thus, in any work place, learning and teaching occur automatically, and often at little cost.[2] Consequently, the internal labor force tends to be more qualified in the performance of plant jobs, even those which it does not hold, than do outsiders. This is true even when the production process is relatively standard and the required skills fairly general in the economy. When jobs are enterprise specific, the advantages of internal training are even greater.

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[1] As indicated earlier, the desire to demonstrate or "show off" skills to others is operative only when such transmission of skills does not pose an economic threat to the "teacher." When training will jeopardize an incentive rate or increase competition for promotion, the incumbent employee may be exceedingly reluctant to disclose his skills. See below p.

[2] However, under certain circumstances the costs of on-the-job training can rise for the very reason that it is automatic and therefore not organized systematically. This problem is most likely to

Both the automatic character of the learning process and its efficiency can be increased by designing jobs, and sequences of job assignments, so that the skills absorbed in one job can contribute to the training required to perform the next job in the progression. In manufacturing, these progressions become promotion units commencing with unskilled jobs at the bottom and the more highly skilled and highly paid jobs at the top. Such promotion sequences give rise not only to technical efficiencies in internal training, but also reduce the recruiting and screening costs required to fill some jobs relative to others. Finally, the promise of internal promotion which the market affords increases the incentive to learn, thereby reducing training costs.

4. Constraints Upon Efficiency

These three factors--the value of the labor force, turnover costs, and technical efficiencies in recruitment, screening, and training--are responsible for the initial generation of internal labor markets. They are also important in shaping the rules which govern the internal allocation structure and the internal wage structure. For the most part,

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arise under "payment by results" systems where the incumbent employee is not adequately compensated for earnings which he must forego while providing instruction. Under these circumstances, on-the-job training will be haphazard and may encourage turnover among trainees who suffer earnings losses as a result of inadequate on-the-job instruction. See, for example, the case of the "learner-spinner" in Paul Pigors and Charles A. Myers, Personnel Administration, (New York: McGraw-Hill, 1961), 4th ed., pp. 573-577.

these rules may be understood as a response to the economic and technical contexts within which the internal market operates. But the rules are not freely responsive to changes in these variables and, at any moment of time, tend to be rigid. Over time they are generally capable of gradual revision. More rapid revisions usually can be obtained only at considerable cost.

The major constraint upon change is that imposed by customary law. As explained above, wage relationships and sequences of promotion which are followed repeatedly tend to become customary. They are then viewed as equitable by employees and efforts to change them suddenly will encounter resistance.

In addition to custom, changes in the rules are subject to several other types of constraints. One of these is inherent in the nature of skill specificity and of on-the-job training. Both place a tremendous amount of power in the hands of the experienced labor force. The training process requires the acquiescence and often the active cooperation of experienced workmen. Where skills are specific, the knowledge of the experienced work force is indispensible to training. Training is also a process, through which the supply of skilled labor is increased. Allocative and pricing rules which respond freely to variations in the supply of trained labor create a tremendous incentive for workers to frustrate the training process whenever possible. A certain degree of wage rigidity and job security is therefore necessary for on-the-job training to operate at all. Indeed, since much of the training is automatic and the effort to stop it would involve each worker in hiding what he is doing from those around him, wage rigidity and job security may also prove essential to efficiency in plants where interaction among workers is an important part of the productive process.

One example from a men's garment plant may serve to illustrate these points. In one pressing department, where all workers are paid piece-rates, an informal arrangement existed where experienced pressers would instruct new hires in short cuts which they had discovered in exchange for some of the trainee's production "tickets" over a two to three month period. Most new hires chose to invest in improved training because of the higher income which such training yielded. Experienced workers were compensated for time spent in more thorough instruction through higher take-home pay or greater leisure.

Another set of constraints leading to rigidity in the rules governing internal markets derives from their role in the provision of employment security and advancement. The rules, as we have seen, affect the relationship between present and future income within the market. The worker accepts employment with the expectation that the rules will operate in the future to improve his income. Such expectations assume a certain stability in the rules, and the employer who later changes the rules to the detriment of the existing labor force reneges on an implicit contract. A violation of expectations through a change in rules affects the incumbent work force, and may induce sanctions against management. It also affects recruitment by calling into question the credibility of any offer of security which management might wish to make in the future. This acts as a deterrent to changes which reduce the security of the work force. Similarly, short-run changes which enhance security, unless they are costless, are deterred by the knowledge that they are irreversible.

The job security provided by the internal market, holding economic conditions constant, depends upon the rules insulating the labor force from external competition and the rules rationing scarce jobs internally. This dependence further constrains changes in the rules.

Insulation from external competition can be affected in one of two ways. One of these is through restrictions upon entry. Craft unions, particularly those in the building and printing trades, rely heavily upon this procedure. The result is a highly constrained set of entry rules, but a relatively flexible set of rules governing the internal allocation of labor.

A second method of insulating workers from external competition is seniority. In the case of strict seniority, jobs are allocated to workers in the order in which they entered the internal market. Because senior workers are guaranteed precedence in employment and promotion over those with less seniority, workers are indifferent to those entering the market after them. Enterprise internal labor markets tend to rely heavily upon seniority, particularly in the allocation of scarce jobs when lay-offs are required. As a result the set of rules governing internal allocation is considerably more rigid than those found in the building trades, but the rules with respect to entry are considerably more flexible.

The rationing jobs within the internal labor market is also a constraint upon rules changes. Normally, job security and promotion opportunity cannot be increased for the internal labor force as a while. When the internal demand for labor falls, every worker who retains his job under a set of internal allocative rules does so at the expense of some other member of the internal labor force who is laid off. Every worker who is promoted forecloses a promotion for someone else. This generates a final set of rigidities in the rules governing internal labor markets. For change, or even discussion of change, inevitably brings different groups of workers into conflict with each other. Such conflicts are particularly costly to trade union organization which relies for its strength upon worker solidarity, and to trade union leaders who see in them the potential support of rival candidates for office. Thus when internal allocative procedures are negotiated jointly by managers and trade unions, the union tends to act as a deterrent to change.

In general, management is also disposed to avoid such issues for any gains to be had from their devisive effects within the union tend to be counterbalanced by the effect of a volatile union leadership upon the stability of labor-management relations. Moreover, devisive conflicts among the work force on so important an issue as job security can have detrimental effects upon productive efficiency quite outside the union-management framework. These factors tend to deter changes in internal allocative procedures even in unorganized shops where management is the sole custodian of the rules.

III. Trade Union Organizations and Managerial Controls

Most of the preceding analysis has omitted reference to the organizational behavior of trade unions or of managements. The omission has been deliberate. Much of empirical information available on enterprise internal labor markets comes from studies of manufacturing plants that are organized by trade unions or that are sufficiently large to require formal managerial structures. This facilitates the understanding of internal labor markets because allocative, training, and wage decisions become the subject of written records and of explicit review by union and management officials. The same policies frequently prevail in less structured organizations, but because they evolve informally and exist only as plant custom, they are more difficult to recognize and discuss. Nonetheless, the impact of worker and managerial organization is not completely neutral and this section attempts to identify its most important effects.

Trade Union Organizations

The existing analytical literature tends to view trade unions either as economic or as political institutions.[1] In the former view, union policy is seen as the outcome of an attempt to maximize the economic welfare of the membership. In the latter view, it is understood in terms of the pressures playing upon a leadership which is attempting to maintain its position in office. Many of these views are most appropriate for the analysis of union policy on the national level where there is a more distinct cleavage between the leadership and the rank-and-file and where policies are more often conceived in the light of recognized economic and political constraints.

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[1] See, for example, John T. Dunlop, Wage Determination Under Trade Unions, (New York: The MacMillan Co., 1944), Arthur M. Ross, Trade Union Wage Policy, (Berkeley: University of California Press, 1948) and Richard E. Walton and Robert B. McKersie, A Behavioral Theory of Labor Negotiations (New York: McGraw-Hill, 1965).

The rules governing internal labor allocation, and to a large extent, the internal wage structure as well, are, however, the province of local negotiations, and the union local. At the local level, social relationships may equal economic or political relationships in importance. Local union officers do not clearly distinguish between themselves and their constituency: they tend to think and act as "one of the boys" and their policy as often represents their assessment of the collective view of the group as it does calculation and an attempt at leadership. In this sense, the local union becomes a vehicle for the expression and enforcement of customary law.

The existence of the local union clearly strengthens employee pressure at the work place. Prior to the advent of a union, custom at the work place is enforced only by unorganized and sometimes unconscious expressions of discontent. Customs otherwise dependent upon unorganized expressions of discontent for their sanction are enforced by the threat of organized, deliberate economic reprisal. The effect is to raise the cost to management of changing customary procedures.

A second result of trade union organization is the codification of unwritten custom into collective bargaining agreements. The effect of this is to limit whatever flexibility custom derives from its dependence upon past practice and memory. This effect should not, however, be exaggerated, for much of customary law is simply brought under the umbrella of the contract's enforcement provisions without ever being committed to written form. This is accomplished through vague contract language, such as "just cause" in discharge, that has concrete meaning only with context of a given work situation and which depends for its interpretation upon unwritten traditions. Many contracts include a clause explicitly sanctioning past practice. These interpretations are subject to much the same process of mutation over time as is customary law.

The third effect of trade unions is to provide an organized channel for deliberate change in customary practices through collective bargaining. In this respect, trade union organization may actually enhance the flexibility of custom and reduce the conflict which it poses for economic efficiency. For example, collective bargaining provides a framework for identifying tradeoffs between customs which have become repugnant to management and new work rules which are equally valued by the work force but are less costly to the enterprise.

The scope for flexibility through collective bargaining increases to the degree that the local officers act as leaders and innovators, rather than simply as spokesmen for the existing rank-and-file sentiment. This, in turn, depends upon a variety of factors. As a rule, large locals are more likely to have full time elected officials than small locals, and these officials are more likely to have larger political ambitions that encourage leadership.[1] But on some issues even large locals can be dominated by cadres operating as a social group and all locals will be dominated by group social pressures on some issues. Finally, the interest of the national union in the affairs of the local union or in the particular issue with which the local is concerned can introduce an element of leadership into a local otherwise disposed to act as a social group.

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[1] See Derek C. Bok and John T. Dunlop, Labor and the American Community (New York: Simon and Schuster Co., 1970). Also Leonard R. Sayles and George Strauss, The Local Union: Its Place In the Industrial Plant (New York: Harper, 1953).

Managerial Organization and Control

Large hierarchical management organizations produce many of the same effects as does trade union organization. The attempt of higher level managers to control the actions of work level managers leads to the formalization of rules and regulations. This tends to freeze the rules and limit the flexibility which unwritten work rules provide.

As in union contracts, however, the terminology in "management rules" is often sufficiently vague as to leave considerable latitude for custom to govern. Moreover, formal regulations may be accompanied by a set of administrative procedures for review and amendment. When the work force accepts these procedures as equitable, they often restore some of the flexibility lost in committing the rules to writing.

The need for formal regulations, it should be noted, is not independent of the existence of internal markets. Where allocative and pricing decisions are strictly governed by a competitive market, as they are assumed to be in economic theory, managers have little discretion. It is the weakness of market discipline, and the consequent increase in managerial discretion, that creates the need for administrative controls to ensure allegiance to the goals of the enterprise.

The dynamics of social groups and of customary law enhance the need for such controls. The tendency for custom to grow up around repeated practices makes it particularly important to prevent inadvertent deviation from efficient procedures. And line supervisors who are particularly susceptible to social pressure of the work group, have a tendency to give greater weight to custom than is consistent with economic efficiency. The opposite danger, which formal regulations are also designed to avoid, is that the line foreman will organize the labor force for personal advantage, and use his position in a corrupt or inequitable manner.

IV. The Historical Origins of Internal Markets

The analysis of "origins" of the internal labor market has largely been metaphorical. Nonetheless, there are indications that internal markets, at least in the United States, have evolved in the course of economic development from a far more open, fluid, and competitive economy in the nineteenth century. That this is the case was certainly the dominant view among labor economists in the 1950's when the question was last subject to widespread discussion.[1] There has been no attempt to undertake the historical research required to subject this hypothesis to careful review. But many of the forces identified in the preceding sections as generating and governing internal markets lend plausibility to the hypothesis and it appears appropriate to summarize that argument here.

First, a general presumption that internal markets have become more prevalent over time is created by their irreversibility. The tendency of custom to grow up around the practice of filling certain jobs from within, of workers to accept employment in the expectation that the practice will continue, and of job skills to become increasingly specific once dependence upon the outside market is reduced, all make it easier to move toward internalization of market functions than away from it. These particular forces, moreover, may come into play without a conscious decision on the part of the employer to institute an internal labor market.

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[1] See, for example, Arthur M. Ross., "Do We Have a New Industrial Feudalism?", op. cit.

Second, the factors responsible for internal markets imply mechanisms which create a tendency for internalization, once begun by a single employer, to spread from one establishment to another within an initially competitive labor market. One such mechanism derives from the role of internal labor markets in the provision of job security. A certain amount of security is also provided by open, competitive labor markets. But the relative security of an open market is a function of its size and of the diversity of industries within it. If any employer withdraws jobs from a competitive market and allocates them internally, the job security of workers in other establishments is thereby reduced and the value of an internal market to them is correspondingly enhanced.

Skill specificity creates a similar effect by increasing the value of internal markets to the employer. The concept of specificity refers essentially to the inability of workers to transfer their skill to alternative employment. Since the internal labor market reduces the accessibility of workers within it to competing employment offers, internalization by one employer increases the effective specificity of jobs within competing establishments and, hence, the incentive for those establishments to resort to internal job allocation.

Third, it appears likely, on balance, that the value of internal markets to the labor force, the cost of turnover to the employer, and the effectiveness of such markets in reducing turnover have all increased in the course of American economic development. Of these effects, the increase in the value of such markets to the labor force is the most debatable. That value is influenced in part by the prevalence of alternative arrangements of insuring future income. These clearly have expanded with the introduction of unemployment insurance and social security in the 1930's and the development of collectively bargained insurance protection in the war and post-war periods. While the expansion of such programs may have operated to promote internal markets in other ways, it has probably worked to reduce their economic value to the labor force.

Working in the opposite direction has been the effect of economic fluctuations. It is here that the irreversibility of internalization comes most prominently into play. The great depression of the 1930's and the automation scare of the late 1950's have encouraged the institution of private arrangements for protecting the employment security of the internal labor force. These protections have not been reversed by the ensuing periods of prosperity or by the generally enhanced stability of the economy in the post-war period taken as a whole.

Finally, the cost of reduced turnover to the employer has probably increased in the course of economic development. One factor clearly working toward this end has been the growth of insurance programs and other forms of non-wage compensation, which indirectly raise turnover costs. A second factor which can be argued to be working in the same direction is the trend in manufacturing technology, in some sectors, to replace the all-around craftsmen with various forms of unskilled and semi-skilled workers who work with the aid of specialized machinery. While these developments have reduced the overall skill requirements of jobs, they may also have increased the specific skill component, and to this extent they will have raised fixed employment costs and the penalties upon turnover they impose.

V. Summary

It has been argued in this Chapter that internal labor markets are a logical development in a competitive market in which three factors (usually neglected in conventional economic theory) may be present: (1) enterprise-specific skills, (2) on-the-job training, and (3) custom. Enterprise-specific skills are those which can only be utilized in a single enterprise in contrast to *general* skills which can be transferred among many enterprises. The effect of skill specificity is twofold: it encourages employers, rather than workers, to invest in training; once the investment has occurred, it encourages employers to stabilize employment and reduce turnover so that they can capture the benefits of the training.

On-the-job training is characterized by its informality. In many ways it appears to occur almost automatically by "osmosis" as the worker observes others or repeatedly performs his job. Because on-the-job training is informal, is a joint output of the production process, and is limited to the skills required by work actually being performed, it appears to be an economical training process. Skill specificity tends to promote on-the-job training by reducing the number of persons learning a particular skill, thereby deterring more formal training programs with their concomitant fixed costs. Moreover, because skill specificity is often the result elements of work which are difficult to codify in a formal training curriculum, on-the-job training may be the only way to transmit skills from one worker to another. The informality and adaptability of on-the-job training, in turn, permits skill specificity to increase inasmuch as the need to codify or standardize the training process is not a constraint upon the evolution of job content.

Custom or customary law is the natural outgrowth of the psychological behavior of stable groups. Where stability of employment is encouraged, a work group will begin to develop customs based upon precedent and repeated practice. As work rules become customary through repetition at the workplace, they come to acquire an ethical, or quasi-ethical, status within the work group (and violations of these customs tend to be punished by the group). Even where work rules may have initially reflected economic forces, custom imparts a rigidity to the rules and makes it difficult to change them in response to dynamic economic forces. Custom seems to form most strongly around wage relationships and internal allocation procedures. This accounts for much of the long-term stability in the wage and allocative structures of internal labor markets and is an important influence in the maintenance of internal labor markets over time.

When one internal labor market emerges in a previously competitive labor market, some workers and some jobs are withdrawn from market competition thereby encouraging other workers and managers to institute internal labor markets within their enterprises. Managers will do so in order to retain their "competitive" position in both product and labor markets. Incumbent workers will do so in order to protect or enhance their employment security and promotion opportunity. Once these markets are prevalent, workers and managers will seek to stabilize the work relationship and to reinforce further the internal labor market. Much of the interest of trade unions in seniority, internal promotion, job control, and equitable treatment at the workplace can thus be interpreted in the light of these effects. Similarly, managements' interest in stabilizing its work force and in maintaining flexible assignment procedures reflects its desire to retain an efficient work force while protecting its prerogatives from the encroachment of customs which will interfere with the profit of the enterprise.

Stability of employment is the most salient feature of the internal labor market. With stability comes rigidity and irreversibility in the administrative rules governing such markets. Not only are they irreversible but, as argued above, they tend to spread and to grow stronger over time among all enterprises. Internal labor markets are favored by employers because they reduce the costs of turnover among workers who have been provided with enterprise-specific skills. Because skills are not transferable among enterprises, because employers seek to induce stability through economic incentives, and because mobility is frustrated by actions taken in other internal labor markets, workers become increasingly protective of such markets, and the privileges which they confer. Finally, the gradual removal of the industrial work force from its agricultural antecedents, the decline in economic fluctuations, the increased specialization of machinery, and the rise in non-wage compensation and social welfare payments have all worked to gradually increase the stability, and the incentives for stability, within the internal labor market.

CHAPTER III

THE ALLOCATIVE STRUCTURE OF INTERNAL LABOR MARKETS

I. Introduction

The allocation of labor is one of the major functions of the internal labor market. As indicated earlier, there are two basic types of internal labor markets, enterprise and craft, both of which are governed by similar principles. The analysis in this chapter, as in other parts of the book, centers upon enterprise markets, although some reference will be made to craft markets as well.

While no national surveys are available, estimates of the proportion of the labor force within these two types of internal labor markets are available from data on employment by size and type of enterprise, and by craft union membership. Table 1 suggests that about 80% of the employed labor force works in internal labor markets, the remainder works in agricultural and service occupations.[1]

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[1] General practioners, street "hustlers," free lance writers, some non-union craftsmen, and the like, operate primarily as unorganized independent entrepreneurs. The best illustration of an unstructured occupational labor market is that of harvest labor. Harvesting work is primarily unskilled and casual. Because of the transient nature of harvest work and the piece rate method of wage payment which standardized labor costs per unit of output, employers make few attempts to identify differences in worker productivities. Moreover, the labor force follows the geographic and climatic pattern of crop maturation os that work is always temporary and the formation of "social" attachments between employers and workers is precluded. Lloyd Fischer has described this labor market as "particularly well suited to accommodate and usefully employ labor of almost any description. The market is without any structure of job rights or preference." Lloyd Fisher, The Harvest Labor Market in California (Cambridge: Harvard University Press, 1953), p. 7.

III.2

Table 1

Employment Distribution by Type of Internal Labor Market, 1965

Type of Labor Market	% of Non-Institutional Employment
Structured	81.4%
Enterprise type	54.4
Military Services	3.2
Workers in Public Enterprises	11.8
Workers in Institutions (Includes Hospitals, Universities, Museums, etc.)	2.9
Union Workers in Large Enterprises	11.8
Non-union Workers under Industrial Agreements	1.3
Workers Outside the Bargaining Unit in Large Enterprises	7.0
Workers in Large Non-union Enterprises	7.0
Workers in Small Enterprises	27.0
Craft Type	
Workers in Craft Unions	9.4
Unstructured	18.4
Proprietors and Self-employed Family Workers	12.0
Farm Laborers	1.5
Domestic Workers	2.4
Self-employed Professionals in Offices and Laboratories	1.6
Workers Performing Odd Jobs, Service and Repair Work	.9
	100.0

Source: Derived from Orme W. Phelps; Introduction to Labor Economics; McGraw-Hill Book Co., New York, 1967.

II. Types of Allocative Structures

The allocative structures of both enterprise and craft internal labor markets may be analyzed according to three characteristics: (1) the degree of openness to the external labor market as measured by (A) the proportion of ports of entry or exit,[1] (the job classifications connecting the internal and external labor markets), and (B) the restrictiveness of the criteria for entry; (2) the scope--size, geographical, and occupational--of the internal labor market; and (3) the rules which determine the priorities for distributing workers among the jobs within the internal market.[2]

1. The Degrees of Openness

A. Ports of Entry

Two polar types of internal labor markets can be postulated: closed and open. All jobs within closed internal markets are filled internally through transfer or upgrading from a single entry job classification. Such closed structures are to be found in production and maintenance units in industries such as steel, petroleum and chemicals, as shown in Figure 1. Workers in these plants are hired

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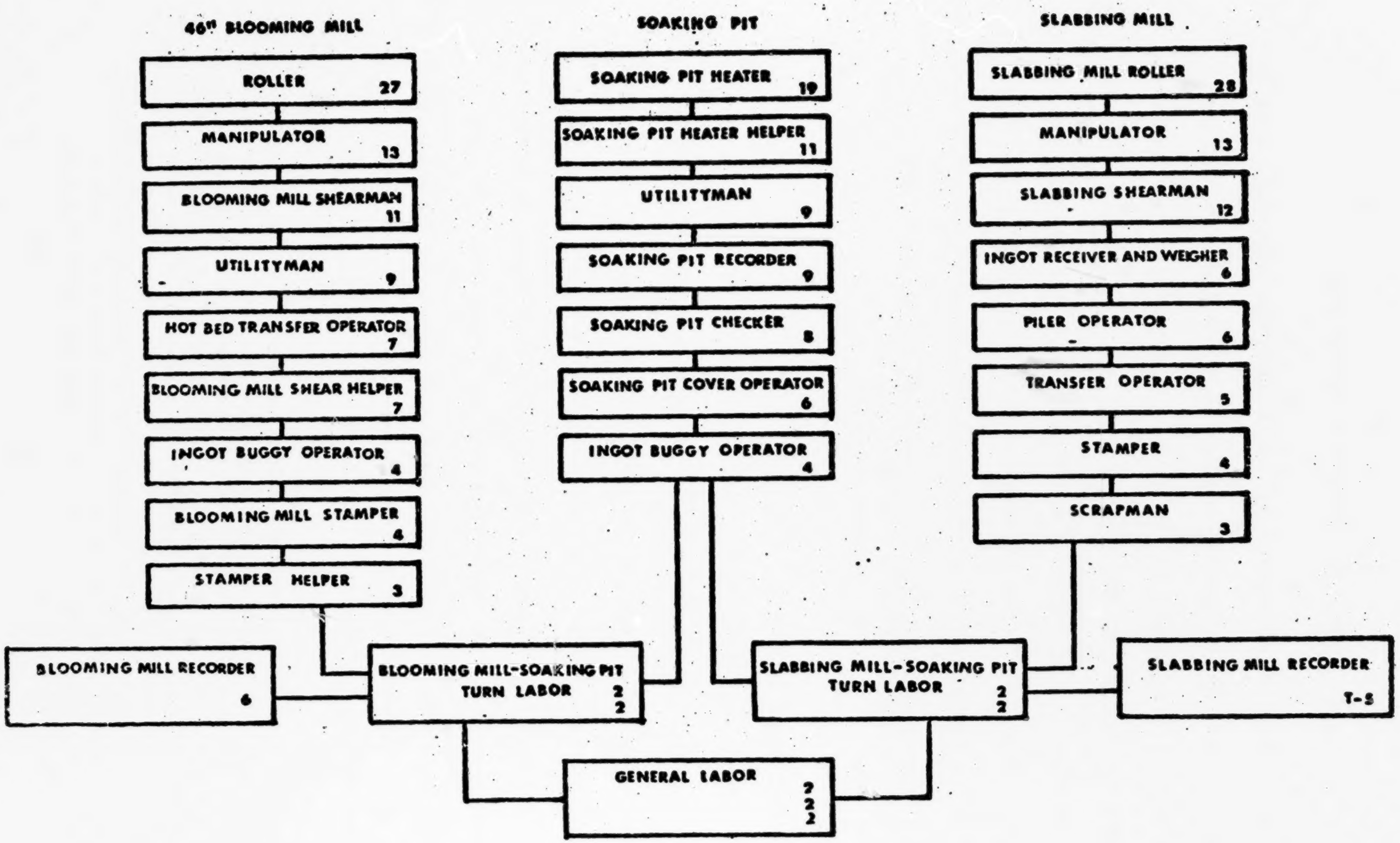
[1] See Kerr, *op. cit.*

[2] Mobility within enterprise labor markets is of three types: (1) upgrading or downgrading, corresponding to secular trends in employment; (2) vertical and lateral movements as a result of seasonal or cyclical fluctuations in output; and (3) temporary reassignments to fill vacancies created by unplanned variations in production and in the attendance of the internal labor force. There are also three types of mobility in occupational internal labor markets: (1) from low skill to higher skill; (2) among employers in the same geographical area; and (3) from regional mobility cluster to another.


46" BLOOMING MILL
ROLLER 27
MANIPULATOR 13
BLOOMING MILL SHEARMAN 11
UTILITYMAN 9
HOT BED TRANSFER OPERATOR 7
BLOOMING MILL SHEAR HELPER 7
INGOT BUGGY OPERATOR 4
BLOOMING MILL STAMPER 4
STAMPER HELPER 3
SOAKING PIT
SOAKING PIT HEATER 19
SOAKING PIT HEATER HELPER 11
UTILITYMAN 9
SOAKING PIT RECORDER 9
SOAKING PIT CHECKER 8
SOAKING PIT COVER OPERATOR 6
INGOT BUGGY OPERATOR 4
SLABBING MILL
SLABBING MILL ROLLER 28
MANIPULATOR 13
SLABBING SHEARMAN 12
INGOT RECEIVER AND WEIGHER 6
PILER OPERATOR 6
TRANSFER OPERATOR 5
STAMPER 4
SCRAPMAN 3
BLOOMING MILL RECORDER 6
BLOOMING MILL-SOAKING PIT TURN LABOR 2 2
SLABBING MILL-SOAKING PIT TURN LABOR 2 2
SLABBING MILL RECORDER T-5
GENERAL LABOR 2 2 2

LINE OF PROGRESSION – 46" BLOOMING MILL – SOAKING PITS – SLABBING MILL almost exclusively into low-skilled job classifications, and most blue-collar skills, including maintenance and repair, are developed internally.[1]

At the opposite extreme is the open market in which vacancies in all job classifications are filled directly from the external labor market. Craft markets generally follow this model. The number of job classifications is extremely limited and each constitutes a port of entry. This extreme case is also characteristic of certain enterprise markets. In the garment and the shoe industries, for example, a high proportion of all production job classifications are entry ports, as shown in Figure 2, and internal mobility is infrequent. In the men's tailored clothing industry, promotion sequences are rarely found and usually occur only in response to serious employment dislocations or critical skill scarcities.

Because such open markets are exposed to the external labor market at a large number of points, hiring often appears to respond to external market conditions in the manner hypothesized in economic theory. This appearance, however, is deceptive. The allocation of work assignments, the determination of wages, and the procedures followed in periods when work is scarce are all governed by administrative rules that are not wholly responsive to market forces and that distinguish sharply between the internal and the external labor force.

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[1] For a study of an internal labor market which develops all of its operating and maintenance skills through internal training and upgrading, see Weinberg, Edgar and Heiman J. Rothberg, A Case Study of a Modernized Petroleum Refinery (Report No. 120) U.S. Department of Labor, Bureau of Labor Statistics, Studies of Automatic Technology, No. 4, (Washington: Government Printing Office, 1957).

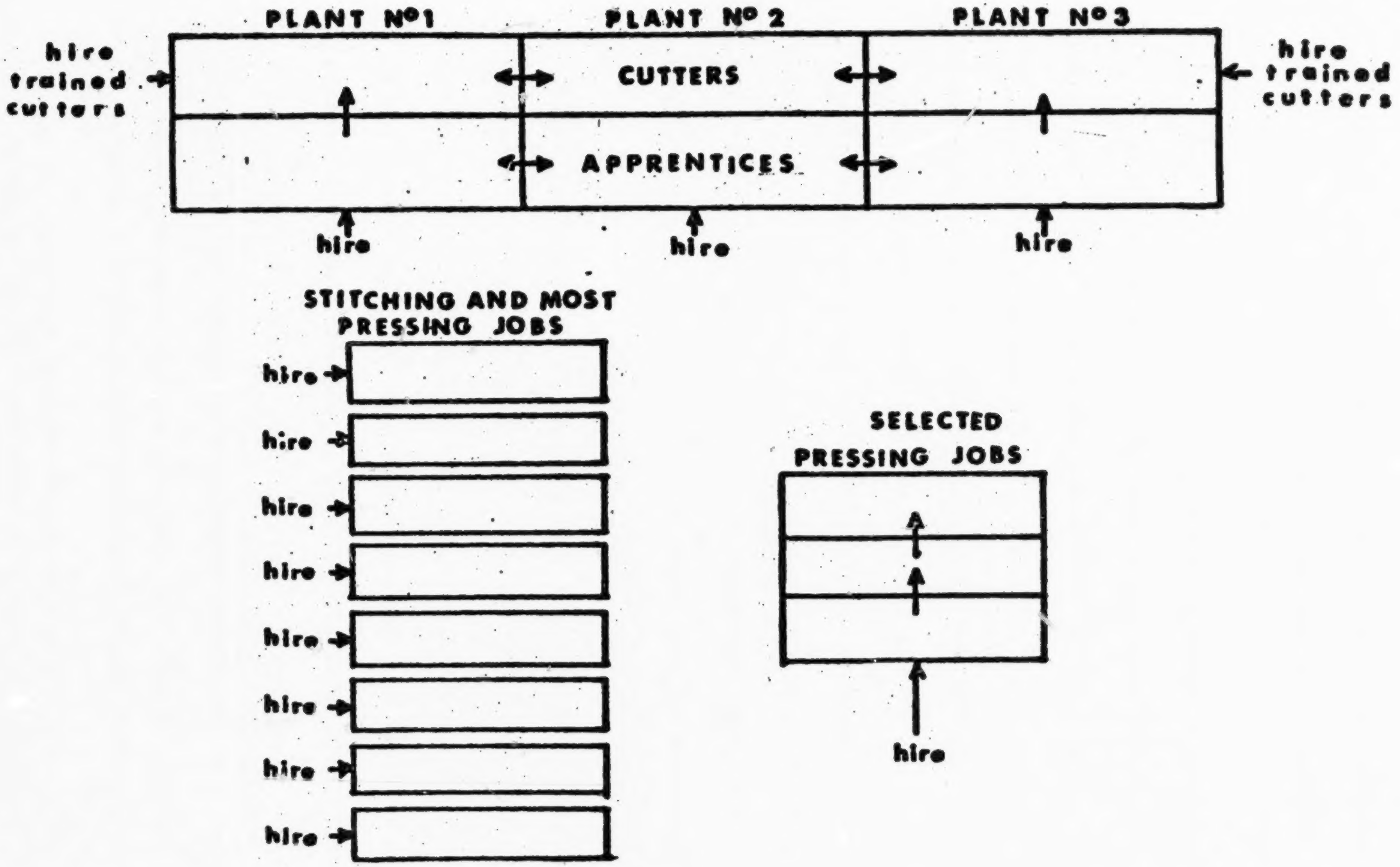
PLANT No1
PLANT No 2
PLANT No3
hire trained cutters
CUTTERS
APPRENTICES
hire trained cutters
hire
hire
hire
STITCHING AND MOST PRESSING JOBS
hire
hire
hire
hire
hire
hire
hire
hire
SELECTED PRESSING JOBS
hire

FIGURE 2

MEN'S GARMENT PLANT

Most enterprise internal labor markets lie between being completely open and the completely closed. In manufacturing for example, hiring classifications for production work are typically low-skilled: laborer, sweeper, machine cleaner, packer, assembler, shipping clerk, and the like. Most semi-skilled and high-skilled production jobs are filled internally. Job classifications such as maintenance electricians, painters, pipefitters, readers, and machinists which exist in many enterprises, and in which a general skill is a major component of job content, may be filled either from external sources or by upgrading less skilled members of the internal labor force. Such a market is depicted in Figure 3.

Internal markets for clerical workers are generally more open than those for blue-collar labor. Each skill or occupational grade may be an entry port so that mail clerks, clerk typists, stenographers, and various grades of secretaries can all be hired from the external labor market under certain circumstances. The permissible circumstances are sometimes limited, however, and a mixed system using both hiring and internal promotion as sources of labor are not uncommon.

For managerial and technical work, internal training and promotion are policies followed whenever possible although, as for clerical workers, mixed systems may also arise.[1] Experienced executives, scientists, and engineers, for example, may be hired from the external market, especially when suitable qualified employees are not available for upgrading. Professional personnel, such as lawyers, physicians

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[1] See Marris, op. cit., and Penrose, op. cit.

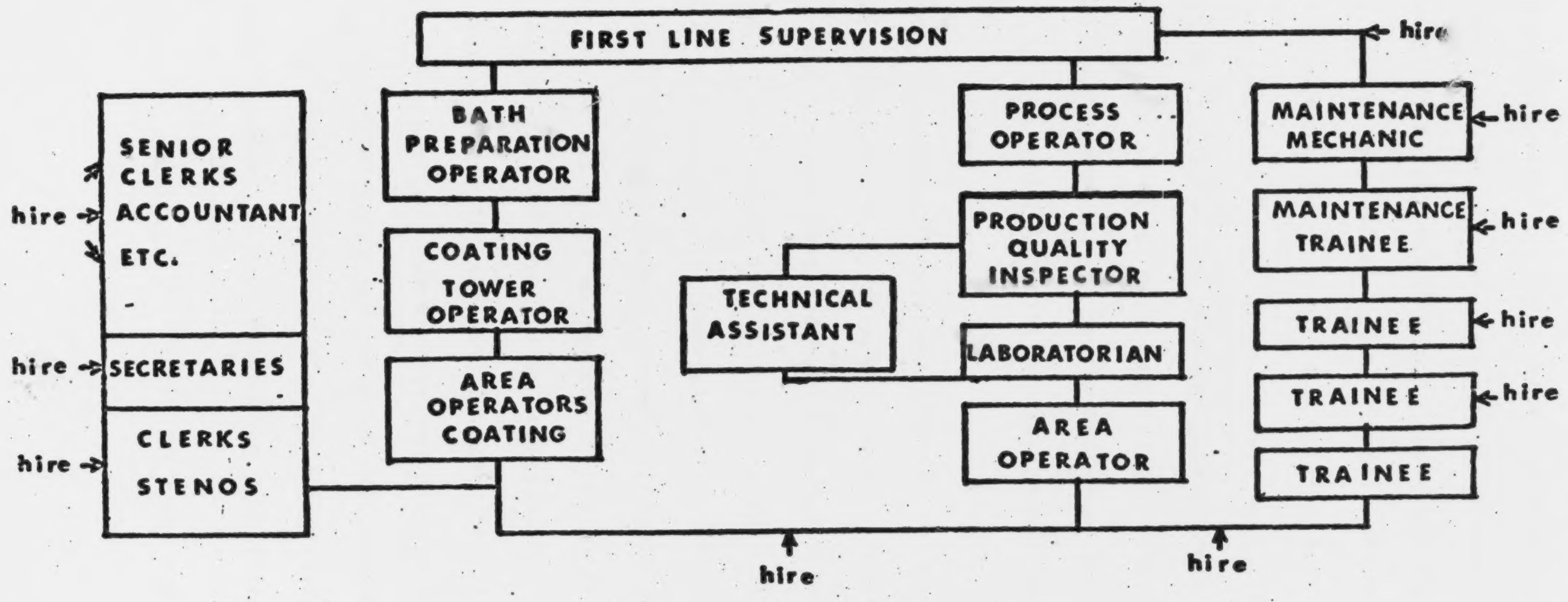
FIRST LINE SUPERVISION
hire
SENIOR CLERKS ACCOUNTANT ETC.
hire
SECRETARIES
hire
CLERKS STENOS
hire
BATH PREPARATION OPERATOR
COATING TOWER OPERATOR
AREA OPERATORS COATING
TECHNICAL ASSISTANT
PROCESS OPERATOR
PRODUCTION QUALITY INSPECTOR
LABORATORIAN
AREA OPERATOR
MAINTENANCE MECHANIC
hire
MAINTENANCE TRAINEE
hire
TRAINEE
hire
TRAINEE
hire
TRAINEE
hire
hire

FIGURE 3

INTERNAL LABOR MARKET — CHEMICAL PLANT

and nurses are usually hired into jobs at a skill and pay grade commensurate with their education and experience, with little or no prospect of internal mobility.[1]

Some enterprises utilize formal training programs as entry ports when they wish to prepare workers for particular jobs or progression patterns that require high levels of skill and background qualifications. This approach may be more efficient than training through other patterns of hiring and upgrading. It may also enable the enterprise to utilize more selective hiring standards for trainees than are ordinarily required of new hires. Management training programs for specially selected college graduates, apprenticeship programs designed to provide persons destined for supervisory jobs with shop experience, and vestibule training programs for equipment maintenance are examples of such entry ports.

B. Criteria for Entry

A second determinant of the degree of openness of internal labor markets is the selection criteria governing entry. These criteria, expressed most often in terms of educational attainment, aptitude test scores, personal interviews, work experience, physical fitness, and so forth, are used to define gradations of "quality" among workers in the external labor market.[2]

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[1] See also Theodore Alfred, "Checkers or Choice in Manpower Management", Harvard Business Review, Vol. 45, No. 1 (Jan.-Feb. 1967), pp. 157-169.

[2] In the past, union membership, race, sex and age have also been used as screening criteria, but these are now subject to various legal

Entry into enterprise internal labor markets is customarily controlled by hiring standards determined by management. These standards ostensibly reflect the skill or worker trait requirements of entry jobs, and of related jobs which are filled internally. However, they are usually free to vary with the tightness of the labor market. In this sense, the openness of enterprise markets may be said to vary with labor market conditions.

Applicants for apprenticeship programs in craft internal markets must usually meet similar kinds of entry qualifications. The journeyman's category in such markets can be reached through a "mixed system," either through "promotion" from an apprenticeship program or by "picking up" the requisite skills. In the latter case, skill proficiency must be demonstrated by passing a journeyman's qualification test or by working regularly in the trade. Temporary clerical help services, another example of a craft market, usually test applicants for minimum typing, shorthand, or office machine skills before accepting them into their referral systems. Placement systems for professional occupations, such as nursing, typically have specific education or training criteria for their services,

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constraints. Federal legislation requires that entry into internal labor markets not be limited or discriminatory with respect to such factors as union membership, sex, race, and national origin. (See Secs. 7, 9(a) (3) and 8(b) (2) of the Labor Management Relations Act, 1947, and Secs. 703(a)(1), 703(c), and 703(d) of the Civil Rights Act of 1964). These statutes, however, do not preclude the establishment of certain non-discriminatory criteria for entry. (See Sec. 8(f) of the Labor Management Relations Act, 1947, and Sec. 703(e) of the Civil Rights Act of 1964).

formally incorporated in licensing requirements.[1] For example, the placement services of state nurses' associations may be available only to nurses who have completed approved or accredited programs of nursing education.

Qualifications for entry into craft internal labor markets are usually based on the level of vocational skill required by the occupation, although monpsonistic control over a work jurisdiction is very often also a factor.[2] As the level of occupational skill decreases, entry into the occupationally oriented internal labor market becomes less restricted. In longshoring, for example, much of the work is unskilled, and entry criteria are often minimal or nonexistent, so that anyone may be allowed to "shape" at the hiring location.[3]

Entry criteria in occupational markets are not as a rule free to vary with labor market conditions. They are more often the subject of labor-management agreements than are standards in enterprise markets and are frequently the subject of legal restrictions and governmental licensing requirements as well.[1]

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[1] See Vol. I of the Report of the National Advisory Commission on Health Manpower (Washington: U.S. Government Printing Office, 1967).

[2] Waivers of entry requirements for occupational internal markets can occur when labor demand is high. Such waivers operate through devices such as work permits, which allow less skilled workers to enter the trade only temporarily.

[3] See Vernon Jensen, Hiring of Dock Workers and Employment Practices in the Ports of New York, Liverpool, London, Rotterdam, and Marseilles (Cambridge: Harvard University Press, 1964); U.S. Department of Labor, Manpower Utilization: Job Security in the Longshore Industry (Washington: Government Printing Office, 1964); and Francis M. McLaughlin, "The Development of Labor Peace in the Port of Boston" Industrial and Labor Relations Review, XX (January 1967), pp. 221-233, for the complete details of hiring practices in longshoring. In the Port of New York, for example, a medical examination must be passed. Moreover, from time to time the medical card rolls may be closed to control the number of workers in the referral system.

C. Ports of Exit

Internal markets typically have definite rules relating to exit, as well as to entry. Exit rules do not generally change an internal market's classification with respect to openness, but because they are of interest in the analysis of other problems, they are considered here.

Exit rules are generally defined for the purpose of controlling involuntary mobility. With the exception of markets controlled by the military or penal authorities the worker is always free to quit his job, to relinquish his union affiliation, or to remove his name from a labor referral system.[2] In enterprise internal labor markets, exit rules deal with a variety of forms of involuntary movement: temporary and permanent layoffs, sabbatical leaves, termination for lack of work, disability, or discipline, and compulsory or early retirement. They determine the location in the job structure of the involuntary exit ports and the conditions under which termination will occur.

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[1] See Richard A. Lester, Hiring Practices and Labor Competition, Princeton University Research Report No. 88 (Princeton: Princeton University, 1954).

[2] On the historical development of the asymmetry between the employees and the employers rights in the employment contract, see Meyers, op.cit., Ch.I.

The rules for leaving craft markets differ from those in enterprise markets. Neither the number of workers nor membership in the craft markets are directly related to the volume of employment in the market at any point in time. Consequently, involuntary separation from the market does not normally occur as a result of a lack of work.[1] A worker, however, who fails to pay his union dues or referral fees when required, who violates rules governing performance or behavior within the market, or who fails to conform to stipulated minimum annual employment requirements may lose his eligibility for referral or employment.[2]

2. The Scope and Structure of Internal Labor Markets and Internal Mobility Clusters

The scope of craft and enterprise markets is defined in terms of their occupational and geographical boundaries. Within these boundaries there are often subdivisions which define the internal structure of each market. For example, entry ports are typically connected to internal mobility clusters, the grouping of jobs within which an employee is customarily upgraded, downgraded, transferred and laid off.[1] Both the scope and structure of internal markets are determined by factors such as job content, predictable changes in the supply and demand for labor, and custom.

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[1] The correspondence between the size of the internal work force and the number of jobs is much less perfect in occupational internal labor markets than in enterprise oriented internal labor markets. In the building trades, for example, the number of journeymen within the referral system may be less sensitive to the particular phase of the business cycle than employment in industrial plants. See Daniel Q. Mills, Factors Determining Patterns of Employment and Unemployment in the Construction Industry, unpublished Ph.D. dissertation, Harvard University, 1967.

[2] For example, a minimum of 700 hours a year are required for a worker to remain eligible for referral and part of the administrative rules governing the allocation of work in longshoring on the New York waterfront. See Manpower Utilization:Job Security in the Longshore Industry---Port of New York, (Washington,D. C.:U. S. Department of Labor, 1964).

A. The Structure of Enterprise Internal Labor Markets

Jobs within mobility clusters share one or more of the following elements: (1) related skills or work experience (lines of progression in steel mills); (2) similar levels of job content (as when janitors, sweepers, and machine cleaners constitute a single unit cutting across several departments in a manufacturing plant); (3) a common functional or departmental organization (such as "maintenance," in which many occupations--electricians, pipefitters, millwrights, machine mechanics, and so forth--are grouped); (4) a single focus of work (such as a computer and its related software).[2]

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[1] These mobility clusters are closely related to the concept of the "job cluster" developed by Dunlop and Livernash to identify groups of jobs within the enterprise which are seen by workers and managers as linked together in the process of determining the internal wage structure. See John T. Dunlop, "The Task of Contemporary Wage Theory," George W. Taylor and Frank C. Pierson (eds.), New Concepts in Wage Determination (New York: McGraw Hill, 1957), pp. 117-139. Job clusters may be empirically defined by identifying those jobs which are compared to one another for purposes of job evaluation and internal wage setting. In most cases these clusters will be found to follow upgrading progressions.

[2] Other factors can also determine the shape of internal mobility clusters. Prior to the passage of Title VII of the Civil Rights Act of 1964, for example, formal or informal designations or race or sex were sometimes applied to jobs and separate mobility clusters were established. Similarly, NLRB election unit determinations may also separate skilled production or maintenance units from the blue-collar industrial units manufacturing plant or other enterprises.

In the enterprise, the dimensions of the mobility clusters may vary with the type of movement (i.e., promotion, layoff, lateral transfer, and so forth) and they tend to be narrower for upward mobility than for downward mobility.[1] In the steel industry, for example, workers are promoted along progression lines within departments. For layoffs, on the other hand, workers can apply seniority rights to employment in an employment "pan" consisting of the lower job grades in two or more departments. The patterns of internal movement may also differ for temporary and permanent moves, with more flexibility usually permitted for the former than the latter.

Mobility clusters have both a vertical and a horizontal dimension. The former is defined by the range of "skill" content of the jobs within the cluster. The horizontal dimension measures the number, degree of specialization, and diversity of the jobs at any level of skill.

In enterprise internal markets, broad mobility clusters are typically associated with jobs having low variation in the levels of job content and a low proportion of specialized jobs. For example, plant-wide mobility clusters are found in many food products companies, in supermarkets, and in small, mass production electronics companies. Narrow mobility clusters are found in establishments where the job structure is divided into departments. In some manufacturing plants --steel, chemicals, autos, and petroleum, for example--there are further internal subdivisions, or lines of progression within production departments. These progression lines may be only one job classification wide, or they may consist of multi-classification steps or branching lines of progressions. The narrowest type of mobility cluster in enterprise internal labor markets consists of a single job classification and each classification constitutes an entry port. Such clusters reflect the high specialization, training time, and unrelated skills among the jobs in the internal labor market.

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[1] See Summer H. Slichter, James J. Healy, and E. Robert Livernash, The Impact of Collective Bargaining on Management (Washington: The Brookings Institution, 1960), pp. 154-210, for a discussion of the various types of internal market patterns for promotions and layoffs in manufacturing.

For managerial and technical jobs, mobility clusters may embrace a number of establishments within a single enterprise since managerial skills are not establishment-specific to the same degree that blue-collar skills are, and since exposure to different work experiences is an important component of a manager's training. Multi-establishment mobility clusters are less common blue-collar workers, appearing most often in times of serious employment dislocation, or when new plants are being established.[1]

B. The Structure of Craft Internal Labor Markets

The geographical scope of craft markets ranges from narrow, locally oriented markets to those which are multi-state or even nationwide. The geographical scope of these markets are determined by (1) the relationship between the demand and supply for the occupation and its distribution over the work year in a geographical area; (2) the potential mobility of the internal labor force; and (3) the geographical area of the product market within which the employers participating in the internal labor market compete.[1] In the case of union-operated referral systems, negotiating strategies and bargaining strength may also be important in determining the geographical area to be served.[2]

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[1] See Slichter, Healy, and Livernash, op. cit., pp. 154-58, for further descriptions of layoff systems and bumping rights. David B. Lipsky provides an interesting example of transfer rates during plant relocation. See David B. Lipsky, "Interplant Transfer and Terminated Workers: A Case Study," Industrial and Labor Relations Review, Vol. 23 No. 2 January 1970, pp. 191 - 206.

Internal labor markets for longshoremen, carpenters, and plasterers, tend to be narrow in scope because the employers typically operate within a limited geographical area and employment opportunities are relatively stable within the area. For boilermakers and operating engineers, on the other hand, the employment opportunities are relatively more scarce within any particular locality, so that their internal labor market must encompass a larger region to provide equivalent employment opportunity. Moreover, such an internal market facilitates labor recruitment in heavy construction, where contractors may have to bid on work over a large region in order to ensure adequate utilization of their capital equipment.[3] Where labor demand is occasionally subject to wide fluctuations among geographical areas, special linkages such as union "travelling cards," temporary work permits, "shipping letters," or other transfer arrangements, are likely to be developed to augment customary allocative procedures.[1]

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[1] See John T. Dunlop, "The Industrial Relations System in Construction," in Arnold R. Weber (ed.), The Structure of Collective Bargaining (New York: The Free Press of Glencoe, Inc., 1961), pp. 271-272.

[2] See Gordon W. Bertram and Sherman J. Maisel, Industrial Relations in the Construction Industry: The Northern California Experience (Berkeley: Institute of Industrial Relations, West Coast Collective Bargaining Systems Monograph #2, 1955), p. viii, and Gordon W. Bertram, Consolidated Bargaining in California Construction: An Appraisal of Twenty-Five Years Experience (Los Angeles: University of California Institute of Industrial Relations Monograph #12, 1966), p. 7.

[3] This relationship has been detailed by Bertram. (See Bertram, ibid., pp.7-67.) The rising capital-labor ratio for heavy contractors, for example, provides a motivation for wider bidding on contracts and more uniform labor cost arrangements over large geographical areas, especially for the operating engineers'

The geographic scope of the market is also influenced by the potential for administrative economies. Labor negotiations, economic agreements, apprenticeship programs, dispute-settling procedures, pension plans, and the efficient utilization of business agents all engender fixed administrative costs. These costs encourage internal labor markets which are sufficiently large to achieve economies of scale and an adequate dues paying base.[2]

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craft. Uniformity of collective agreements in turn encouraged more inter-local labor mobility, especially when work was plentiful and created incentives, both for the contractors and the unions, to reduce geographic jurisdictional barriers and to encourage movement of labor over a broader area.

[1] For a discussion of the histroical development of such transfer arrangements in craft type internal labor markets see Lloyd Ulman, *op. cit.*, pp. 49-152. Bertram indicates that such arrangements for inter-local movement are common, but not numerically substantial. Although figures were not available, Bertram states that most inter-local movement occurs among iron workers and operating engineers, primarily in response to the shifting location of larger construction projects. See Gordon W. Bertram and Sherman J. Maisel, *Industrial Relations in the Construction Industry: the Northern California Experience* (Berkeley: University of California, Institute of Industrial Relations, 1955).

[2] See Dunlop, "The Industrial Relations System in Construction," *op. cit.*, p. 271, and Bertram, *op. cit.*, p. 64.

C. The Control of Employment Opportunities in Craft Markets

As indicated earlier, craft markets encompass a number of employers. Such markets may have total responsibility for allocating workers among the jobs in the market, or may serve as an adjunct to other methods. In the building and maritime trades, these two systems are often referred to as exclusive and non-exclusive referral arrangement.

Under exclusive referral arrangements, the internal labor market is the sole source of workers for the employers within it, subject to certain qualifications. If the referral system fails to provide competent workers within a limited time period, the employer is usually free to obtain labor elsewhere.[1] Employers may also be allowed to hire certain "key employees, such as foremen, and a percentage of "regular" employees, without recourse to the referral system.[2] This is often the case where contractors operate in a number of different regions.

Under the non-exclusive referral arrangement the employer may utilize both the referral system and the external labor market in general. Such non-exclusive internal labor markets are found in the building trades, temporary help services, and among professional associations which operate placement services.[1]

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[1] In the maritime and construction trades this time limit is usually 24-48 hours. However, when emergency situations require labor immediately, this time limit may be waived. For example, in the referral system for hotel service employees in New York City run by the New York State Employment Service, a 48-hour time limit for referrals is automatically reduced to one hour in emergencies.

[2] Key people typically possess critical supervisory or craft skills. These people are familiar with an employer's work practices and equipment, and their presence in a job may be crucial to productive efficiency, especially among small general contractors or operative builders who may have developed employer-specific production techniques. (See Bertram and Maisel, op. cit., p. 47.)

3. Priorities for Internal Mobility

The rules which determine the priority or ranking by which workers move within a mobility cluster depend upon such factors as ability, seniority, and frequency of work. These criteria, however, may be limited in various ways and employees may or may not elect to accept assignments for which they are eligible under a given set of criteria.

A. Enterprise Internal Labor Markets

Seniority and Ability

Although some enterprise internal labor markets rely exclusively upon either seniority or ability in deciding priorities for internal movement, most employ some combination of the two.[2]

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[1] A study of building trades workers in the Boston labor market indicated that one-third of the construction craftsmen utilized union referral systems in the process of obtaining employment, one-third had a regular attachment to an employer or foreman, and the remainder found their jobs through casual search. (Abraham Belitsky, Hiring Problems in the Building Trades, unpublished Ph.D. dissertation, Harvard University, 1960, p. 25). Bertram and Maisel suggest that, in the building trades, the size of jobs as well as the type of work may be a factor in the mix between regular workers and reliance upon union referrals in a non-exclusive referral system. They postulate that turnover, and contractor-specificity of experience and skills, affect efficiency and that efficiency is more important on small jobs than large. (Bertram and Maisel, op. cit., p. 47). The stability of contract volume is also important as the proportion of keymen who can be economically retained will depend on how much a contractor's labor needs fluctuate.

[2] Because of on-the-job training seniority and ability are generally correlated. A study by James J. Healy found that arbitrators were continuing to follow the "head and shoulders" principle, which

In any particular enterprise a different combination may be used for promotions than for layoffs. In large and medium-sized manufacturing plants, for example, seniority predominates in determining layoffs within production and maintenance units. Those plants which do not use seniority for layoffs generally provide some other form of employment security, such as employment guarantees or work-sharing procedures.[1]

Most promotions and lateral transfers, however, are determined by ability factors as well as seniority. The emphasis upon ability varies from complete reliance upon merit and ability to automatic promotion of the most senior employee, subject only to his ability

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emphasized the seniority factor in promotions, unless an obvious case of ability distinction existed, and that there was a substantial amount of management satisfaction with the subsequent work performance of the senior employee. He concluded that "in an industry in which semi-skilled jobs predominate, clearly discernable differences in ability among a large group of employees is so lsight that they do not govern the selection of persons for promotion." (James J. Healy, "The Factor of Ability in Labor Relations," in Arbitration Today, Proceedings of the Eighth Annual Meeting of the National Academy of Arbitrators (1955), p. 53.

[1] Internal labor markets containing jobs which are insulated, to some degree, from the external labor market antedate the widespread appearance of formalized rules structures. In a study by Roy W. Kelly, Hiring the Worker (New York: The Engineering Magazine Co., 1918), only twenty per cent of the firms surveyed had any formal promotion plans. Only one firm in thirty had a plan which involved seniority; the rest relied upon a personal judgment (usually a foreman's) in selecting candidates for promotion. One firm did not replace older workers with younger, more able people, in order to sustain morale (pp. 27-30). A later study by Paul Gemmil "Methods of Promoting Industrial Employees," Industrial Management, Vol. LXVI, April 1924, of a sample of 150 large companies (100 or more employees), found that 141 had a policy of promotion from within. Two of these firms promoted the most senior worker, and ninety-seven used seniority when "merit" was equal among alternative employees. See also Sumner H. Slichter, Union Policies and Industrial Management (Washington: The Brookings Institute, 1941), pp. 276-79, pp. 542-43.

to perform the job after a trial period. Some enterprises apply both criteria to all types of internal movement; others use a "float line" system where seniority exclusively determines internal movement among job classifications below a certain job grade, and ability governs movement above that grade. This arrangement is common in parts of the flat glass industry and applies informally in many other industries.

Reliance upon seniority as a criterion for internal mobility is often identified with trade union objectives, but some unorganized firms also adhere to promotion by straight seniority. Most enterprises which rely solely on merit criteria for promotion, however, are unorganized.

Bumping Rights

Bumping rights are closely related to the issue of ability and seniority. Bumping rights define the sequence in which workers displace one another when being downgraded and laid off. This sequence, in turn, affects the relative job security of individual workers and the retraining costs incurred by the employer. For example, chain bumping, in which a bump by one employee initiates a series of consecutive bumps down a progression line before a layoff results, produces the greatest average number of reassignments per redundant employee. This introduces costs and frictions into the redundancy procedure since each move requires some retraining and reorientation to work. When these costs are significant, management will prefer by narrow downgrading districts. Alternatively it will seek to limit the number of bumps by requiring that surplus employees in higher skilled classifications bump directly into the lowest skilled jobs or by permitting workers with, for example, ten years of seniority to bump only those workers with five or less years of seniority.

Posting and Bidding

The priorities for internal movement are sometimes affected by "posting and bidding" arrangements. These are rules for notifying workers of internal vacancies and for allowing them to select opportunities for internal movement. Internal job vacancies are made availabile to the internal labor force in a variety of ways. Notifications of vacancies may be formally "posted" on bulletin boards or communicated by supervisors and co-workers. Workers may then "bid" for jobs or otherwise signify their interest in reassignment. Such procedures determine the group of applicants to which management will apply the selection criteria described above when filling a particular internal vacancy.

B. Craft Labor Markets

The priorities for movement in craft labor markets often depend upon a system of categories of workers. These categories may be based upon a combination of factors such as length of previous work experience with employers under a particular collective agreement, length of work experience in a craft, or the period of residency in a particular geographic area.[1] All workers in the most preferred category are referred to employment before workers from the next category are eligible for referral. Assignment or referral within each category is then made according to a principle of rotation. Often the principle of "first in, first out" is used so that the first job opportunity goes to the worker with the longest period of continuous unemployment. This system may be modified to equalize earnings by considering total days worked as well as frequency of employment. Sometimes, personal factors, such as health and family problems, may be taken into consideration as well.

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[1] For example, a referral priority clause in an International Union of Operating Engineers agreement might read as follows:

Group A. All applicants who have worked as operating engineers for the past four years; who have been employed for an aggregate time of at least one year during the last four years by employers who are parties to collective bargaining agreements with the union,...and who have maintained residence for the past year within the geographical area constituting the normal construction labor market...

Group B. All applicants for employment who have worked as operating engineers for the past four years and have been employed for an aggregate time of at least six months during the last four years by employers who are parties to collective bargaining agreements with the union, ...

Group C. All applicants for employment who have worked as operating engineers for the past two years and who have maintained residence for the past year within the geographical area constituting the normal construction labor market...

Group D. All applicants for employment who have worked as operating engineers for one year.

Group E. All other applicants for employment.

[Suggested Hiring Hall Clauses; International Union of Operating Engineers.]

Craft labor markets do not ordinarily recognize enterprise seniority as a basis for referral priorities. Consideration of internal market seniority, however, is not entirely absent. For longshoring in New York, for example, length of service governs assignment priorities within "pier," "section," "borough," and "port" referral categories. In Chicago, Local 134 of the International Brotherhood of Electrical Workers uses seniority in developing priorities for both referral and layoff. A journeyman acquires seniority, for purposes of referral, either by having worked one year with a single employer or two years with more than one employer under contract with the Chicago local. Once a worker has been employed for six months by a single employer, layoffs, with the exception of those lasting three days or less, are governed by seniority within that employer's work force.

Skill and ability may also be criteria for referral in craft markets. The New York hotel service employees' referral system, for example, maintains separate priorities for chambermaids, waiters, chefs, and the like. Similarly, the Operating Engineers would not refer a worker who could operate only scrapers and bulldozers to a job vacancy which required a crane or derrick operator.[1] Among temporary help services, ability is usually the exclusive criterion for referral.

III. The Determinants of the Allocative Structure

There is a unity and coherence to the rules governing the internal allocation of labor which implies that a change in any one dimension will normally require adjustment along other dimensions as well. For example, limitations upon the employer's freedom to assign and utilize his work force will be reflected in highly selective hiring criteria; employment guarantees are associated with considerable managerial freedom to modify jobs and to redeploy the internal labor force. As a result, internal labor market structures exist in an almost bewildering array of combinations.

Nonetheless, the classification scheme outlined in the preceding sections suggests a set of features which they share in common. These features reflect the forces identified in Chapter II as responsible for generating internal markets and for governing their behavior. The structure of the enterprise internal market is influenced by management's interest in internal allocation as a means of promoting efficiency by reducing training and turnover costs. The structure most efficient in these terms, however, is compromised by the work force's interest in the internal market as a means of enhancing job security and advancement. Further distortions are introduced by the rigidities of custom which inhibit the response of the allocative structure to changes in the interests of labor and management.

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[1] See/Garth L. Mangum, *The Operating Engineers,* (Cambridge: Harvard University Press, 1964), pp. 270-275.

1. Allocative Efficiency

The employer's interest in the allocative structure is to minimize the cost of turnover. If all vacancies could be filled without cost, the employer would be indifferent toward various market structures.[1] When turnover costs are present, the employer seeks to design jobs and arrange them in mobility clusters which reduce such costs. The openness of a market and its internal structure will therefore be subject to the influence of the various factors determining turnover costs. Ultimately, these are the technology embodied in existing capital equipment, the volume of production, the product mix, and the characteristics of the external labor supply. These fundamental variables are reflected in the levels of job skill, the mix of specific and general skills which the jobs require, and the relation of content among various jobs, all of which exercise a direct influence upon turnover cost.

Where the skill content of jobs is low, recruitment, screening, and training requirements are small and turnover costs are trivial. Under these circumstances, the job structure exercises relatively little influence upon the internal allocative structure, and broad internal mobility clusters often emerge. Similar structures also develop when the content of jobs is closely related so that workers can be interchanged with few retraining costs.

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[1] Workers, however, would still prefer a system which relied upon internal upgrading unless the opportunity costs of inter-enterprise mobility costs were also zero.

When each job requires skills which are essentially independent of other jobs and which are developed through an extended period of on-the-job training, there are no efficiency gains from internal movement. Each time a worker changes jobs internally, the full expenses of training must be incurred. In this case, workers are not ordinarily transferred among jobs in the internal market. Moreover, in periods of work force redundancy management has little incentive to develop layoff procedures or to utilize seniority. Since both recent hires and experienced workers are equally trained, costs cannot be minimized by laying-off junior workers. Instead, there is a tendency to emphasize work sharing arrangements as a means of retaining the entire complement of trained workers. The open markets of the garment and the shoe industries are good examples of this phenomenon.

A different type of internal labor market structure is the line of progression. This structure occurs in enterprises where jobs are differentiated by levels of skill and fall, or can be designed to fall, into natural skill progressions. Work on one job develops the skills required for the more complex tasks on the job above it, and those at one point in the line constitute the natural source of supply for the next job along the line. Ideally, the training required to learn any given job in the progression occurs on the job below it, and workers are fully qualified by the time they are promoted. Layoffs are made in reverse order of progression. Such an allocative procedure captures the training opportunities inherent in natural skill progressions and lay-off in reverse order of progression ensures that workers with the most training will be retained in employment longest.

Efficiency under these circumstances favors narrow allocative districts synonomous with these natural lines of progression. It also favors the restriction of entry to jobs at the bottom of the progression line. Consequently, strict screening of candidates for entry is utilized to ensure promotability to the more skilled jobs in the line. Lines of progression are found in steel mills, paper mills, petroleum refineries, and in other process industries.

Jobs may also differ widely in terms of turnover costs, regardless of skill relationships. Some jobs involve heavy employer investments in training, screening and recruitment; for others, these investments are minimal. Because the allocative structure of the internal market is designed to reduce turnover costs, it is important to control the incidence of turnover within the job structure. Some promotion sequences therefore arise where jobs are ranked by turnover cost, with minimal cost jobs serving as ports of entry and exit. In most cases, jobs are designed and placed into mobility clusters that are consistent to some extent with both reducing costs and utilizing skill relationships. This pattern resembles that of a line of progression, except that the internal labor force is not completely trained for promotion by work on lower level jobs. Consequently a period of training and adjustment after promotion is generally necessary before peak efficiency is reached. Very often a readjustment period is also required in demotion during a lay-off to regain peak efficiency in a job previously performed. Such training and readjustment periods create cost to internal movement and generate an employer interest in reducing the amount of movement when layoffs or promotions occur.[1]

2. Employee Interests

While the underlying structure of an internal market tends to reflect the requirements of allocative efficiency, the actual structure is generally modified to a greater or lesser extent to accommodate employee interests. These interests center upon the role of the internal market in enhancing job security and advancement. They therefore favor broad mobility clusters with wide geographic and occupational coverage entry confined to a few low skilled jobs, and reliance upon uniform criteria such as seniority in the internal allocation of jobs.[2]

These characteristics are favored because, in the absence of employment guarantees, income and employment are insured only so long as the displacement of a worker on one job coincides with a vacancy on another job to which he has access. The chances of this occurring are greater, the larger the size of the internal market. They are further enhanced by technical and economic diversity which reduces the chances that a technical change or an economic contingency which eliminates one job will affect other jobs in the internal market as well. Rules which limit entry and which allocate jobs on the basis of seniority related criteria protect the worker from the competition of those outside the market or those entering the market after him.

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[1] See, for example, the discussion of "chain bumping," supra, p.

[2] See Phillip Selznick and Howard Vollmer, "The Rule of Law in Industry: Seniority Rights," Industrial Relations, Vol. I, No. 3, May, 1962.

Worker interests produce classic industrial relations conflicts over the design of internal market structures. Among these is the conflict between seniority and ability in job allocation. Another is the clash between the wide mobility districts favored by workers and the narrow districts which employers tend to favor. The resolution of these conficts varies depending upon the pressure which the work force can muster in its behalf and the sacrifices in wages and other aspects of the employment offer which it is willing to make to obtain concessions from the employer. But in virtually all cases, these are sufficient to induce some departures from the allocative structure that the employer would otherwise design.

3. The Interaction of Allocative Efficiency and Employee Interests

The relationship between allocative efficiency and employee interests can perhaps be best illustrated by the allocative rules designed to deal with anticipated fluctuations in the supply or demand for labor within the internal labor market.

Most internal markets are designed to accommodate certain more or less anticipated fluctuations in the supply of workers on the external labor market and in the demand for labor internally. Procedures for handling such fluctuations are often embodied in the rules governing internal labor allocation and the content of jobs is sometimes designed to facilitate the accommodation to these fluctuations.

The outstanding example of anticipated variations are seasonal and cyclical fluctuations in the demand for production workers. Such variations often generate an elaborate set of rules and customs governing transfer, layoff and recall. Because these rules constitute an acceptable compromise between the narrow allocative efficiency desired by management and the workers' interest in employment security, such fluctuations place no strains upon the internal market structure.

The structure of markets for manufacturing production workers contrasts with that of markets for managerial and professional employees. The latter are not in general subject to, or prepared to accommodate, wide variations in demand for labor. Workers in this market have acquired, by precedent, an implicit employment guarantee which makes lay-offs a jolting experience. The nature of this phenomenon is most clearly illustrated by the Aerospace industry, with its large technical labor force and employment fluctuations determined by unpredictable vagaries in government contracts. At present, the industry appears to be seeking a new market structure which will facilitate the transfer of workers among enterprises to take advantage of the greater stability of industry, as opposed to enterprise, employment.

Employment delines are only one type of fluctuation which internal market structures can be designed to accommodate. Another fairly common type is the internal scarcity of various skills. For example, some markets have several internal sources of supply. The preferred candidates for promotion might be the incumbents of neighboring jobs, but if these workers do not have sufficient experience or refuse the job, internal recruitment might be extended to a worker in another department who possessed related skills. There are similar choices between internal promotion and external hiring. The auto industry, for example, normally hires skilled craftsmen from the external market. A secondary route of entry is through an apprenticeship program to which incumbent employees have access on a competitive basis with outside candidates. A third route, the "temporary skilled craftsman," is opened only in a very tight market when external craftsmen are not available and apprentices are not yet ready for advancement. The "temporary skilled craftsman" is a kind of "para-professional" position for which productive workers are trained on the job.

Variations in product demand also have their effects upon the internal market structure. Diversified establishments accustomed to frequent changes in the composition of product demand generally train workers more broadly than firms producing one or a few standardized products. Mobility sequences typically involve rotating employees through a variety of different jobs of similar difficulty before they are permitted to progress to a higher skill level, much like the pattern for managerial trainees in many large corporations. Similar broad training is usually provided in plants which undergo frequent technological change and the implications of a change in technology are totally different from those in firms whose market structures are predicated on a relatively stable technology.[1]

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[1] It is to be noted that some of these accommodations to fluctuations in demand and supply involve not only the allocative structure but the job structure as well. For example, in autos, when temporary skilled craftsmen are used in the place of journeymen, work assignments must be revised to ensure that the really complex jobs are separated from other work and assigned to the available journeymen. Jobs may also be designed to require a broad range of skills as a means of accommodating the work force to frequent changes in products. See Chapters V-VI.

4. Custom

Custom is the third force playing upon the design of allocative structures. Because one effect of custom is to inhibit change, it causes the allocative structure to reflect the efficiency considerations, employee interests, and balance of negotiating power prevailing at some time in the past. A general outline of the nature of custom has been developed in the preceding chapter and need not be repeated here. However, several facets of the way in which custom affects the allocative structure should be emphasized.

For example, in discussing the way in which internal markets are structured to accommodate anticipated fluctuations in labor supply and demand, the customary nature of these arrangements should be borne in mind. Even when they are negotiated and spelled out in contracts, their true sanction is precedent and past practice and/ they become "rusty" or difficult to evoke if they are not frequently reaffirmed. For instance, a set of procedures for reassigning workers in cases of product change will lose its legitimacy in the eyes of the labor force unless it is regularly utilized. Also the work force forgets many of the skills which facilitate work on other products if it continually exercise only the skills specific to one product.

A second aspect of custom that requires emphasis in the present context is the role of vested interests and expectations which grow up around existing allocative structures. These tend to reflect pressures for change in odd ways, producing structures totally different from those which would emerge if the interested parties were free to establish internal labor market structures _de novo_. This often gives such structures a random, or haphazard appearance in which it is difficult to recognize the core forces of efficiency and work force security which were originally controlling.

Typical of this process are the changes introduced by attempts to maintain economic parity among lines of progression in different departments. Technological change very often operates over time to shorten some lines and reduce the number of high paying jobs at the top. This creates resentment among workers already in those lines whose expectations of future income are disappointed and who see junior workers in other districts moving above them in pay and status. It also leads workers to refuse assignment to jobs in these lines in anticipation of vacancies at the bottom of longer lines with greater opportunities for advancement. The efficient solution to this problem is to merge the shortened progression lines with other lines in the plant. However, this is generally resisted by workers in preferred lines who fear the competition of senior workers from whom they would otherwise be insulated. The alternative is typically an effort to improve the attractiveness of short lines by adding new jobs at the top. The added jobs often have little relationship in skill, geographic proximity or turnover cost and the result is sometimes a promotion sequence consisting of a hodge-podge of unrelated jobs.

A final aspect of the internal market structure where change is constrained by custom is in the relative weight given to seniority and ability. Managements are perpetually concerned that technological changes will make employees with promotion expectations unqualified to perform the work. This results, in many plants, in the imposition of entry criteria far in excess of the requirements necessary to master even the top job in a line of progression developed for the current technology. It also biases management in favor of ability as a selection criterion even when seniority and ability are almost perfectly correlated.

Whenever custom results in the loss of allocative flexibility that efficiency is seriously impaired, it can often be regained only by instituting some form of employment or income guarantee or by relocating the plant. Where employment guarantees are developed they are often accompanied by the introduction of a distinction between incumbent employees, to whom the guarantee applies and new workers, who have lesser employment rights. In the extreme, the employees hired after the guarantee is installed are treated as temporary workers, with few employment rights. This procedure has been used in sugar refineries, and it is also a component of many longshoring markets.

IV. Summary

In this chapter, the allocative structures of enterprise and craft internal labor markets have been described. These structures can be analysed according to (1) the degree of openness to the external labor market; (2) the scope of the market and the patterns of mobility within it; and (3) the rules determining priorities for internal movement.

Each internal labor market structure reflects a compromise between managements' concern with efficiency and workers' interests in enhancing job security and advancement opportunity. Patterns of entry and internal mobility are typically designed to capture natural on-the-job training sequences and to reduce turnover costs. Priorities for internal movement combine ability and seniority in varying ways, also according to training and retraining costs.

These structures are designed to accommodate predictable changes in product demand, in technology, and in the availability of skills on the external labor market. Where such change threatens the security of the internal work force, allocative procedures involving seniority, wide mobility clusters, and other arrangements favoring the protection of employment rights tend to take precedence over efficiency considerations in determining the internal allocative structure.

The allocative structure of the internal labor market is a focal point around which strong customs are formed. Consequently, present market structures will often reflect the influences of earlier economic and technological conditions. Custom makes the allocative structure stable and encourages internal training, informal job redesign, and other activities helpful to efficiency. However, when economic or technological factors change radically and in unanticipated ways, custom may be a deterrent to adaptation within the internal labor market.

Chapter IV

Wage Determination Within the Internal Market

In conventional economic theory, wage determination and labor allocation occur simultaneously as part of the operation of the competitive labor market. In the internal labor market these two activities should also be related, although administrative rules and custom, as well as economic forces, should presumably govern this relationship. For example, wage rates should, at least in principle, influence the movement of labor among the ports of entry in different enterprises, even when most jobs are removed from external competition by internal promotion arrangements. One would also expect the internal allocative process to carry implications for the wage structure within the enterprise. Although wages were not the central focus of the studies from which this volume derives, these expectations were, in fact, borne out by the comments concerning wage determination made by numerous respondents during interviews. Thus, although not under direct investigation, a picture did emerge of the wage determination process in manufacturing.

In this Chapter the process of internal wage determination is examined. The chapter is divided into four sections. The first section is devoted to a description of the wage determination process. The problem of interpreting that process and of identifying the forces which it expresses, or is designed to express, is discussed in Section II. It is argued there that, while it is possible to interpret many of the phenomena which occur in wage determination in manufacturing within the confines of competitive neoclassical theory, there are important aspects of the process which strain the neoclassical constructs. These aspects appear to be related to the internal market and the forces which dictate its existence. This theme is developed in the two concluding sections of the chapter.

I. The Internal Wage Setting Process[1]

In the manufacturing plant, three dimensions of internal wage structure are recognized: (1) the plant wage level, (2) the vertical differentiation of the wage structure, and (3) the horizontal or intra-level differentiation of wages. The first term is actually used by managers and union officials in discussing wages. It is clear from the contexts in which it is used that the "wage level" is a summary statistic for describing the wage structure as a whole. The term is applied in different contexts, however, so that the precise statistic to which it refers is not always apparent. For example, it is frequently used to describe the plant wage level relative to other plants in the community: e.g., "our level is the third highest in the community," or "our wage level is about average." A second use of the term is as a weighted average of plant wage rates. This may be an average for all hourly workers, for production and maintenance workers, or for a category known as "direct" personnel. Occasionally, the term makes reference to the plant wage bill or to the entry wage, the latter being the base upon which the internal wage structure is often built.[1]

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[1] Formal wage setting procedures have received little attention among economists. The presumed congruence between administered and market wages is largely responsible for economists' indifference toward administrative instruments. The following discussion is addressed primarily to that audience and it is designed to emphasize the relationship between formal procedures and the market forces identified in economic theory. The material covered will be more familiar to students of personnel administration; it is an abbreviated version of a topic extensively treated in every personnel text in comparison to which the present treatment will seem oversimplified, and for certain purposes, ill-conceived. Readers primarily interested in the practice of wage administration should certainly refer to other sources. See, for example, Charles A. Myers and Paul Pigors, Personnel Administration (6th edition), McGraw-Hill Co., New York 1969, Chapters 20-2.

Participants in the wage setting process do not have a clear terminology for the second and third dimensions of the wage structure, the vertical and horizontal differentiation of wages, but they are recognized. Vertical differentiation refers to differences in wage rates among individuals holding differnt jobs. This differentiation commonly takes the form of skill grades or wage steps and is commonly referred to as the "internal wage structure."[2] The horizontal differentiation refers to differences in rates among individuals holding the same jobs.

The process through which these dimensions of the wage structure are established is most readily understood in terms of the formal instruments of wage administration: job evaluation, community wage surveys, and engineered production standards. Not all manufacturing plants, by any means, utilize these instruments, and only the larger and more sophisticated plants utilize all three. The instruments do appear, however, to represent a formalization of the process through which wages are set in their absence and thus are the codification of a more general wage setting process.

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[1] Since the wage structure which the term seeks to summarize is a distribution and, as such, is not readily summarized by a single statistic, the several concepts to which the term is applied are understandable. It is to be noted, however, that none of the summary statistics describe the dispersion of the wage structure or the differentials between jobs.

[2] Jacob L. Meij, (ed.), Internal Wage Structure (Amsterdam: North-Holland Publishing Company, 1963).

A. Job Evaluation and the Vertical Differentiation of the Wage Structure

Job evaluation is a procedure for arranging jobs in rank order according to a consistent set of weighted job characteristics and worker traits. The specific factors evaluated and the weights attached to them vary among job evaluation plans. Such plans are typically constructed in three stages.

First, a set of categories is selected upon which differences in wage rates will be based. These generally include categories of characteristics relating to the job itself (e.g., skill, working conditions, responsibility for equipment, responsbility for directing other workers) and categories of characteristics pertaining to the characteristics of the individual holding the job (e.g., education, experience, and the like). Second, a maximum number of points or weights is assigned to each of the broad categories. Thus, for example, for the group of categories selected above, the point totals might be those displayed in Table 1. Finally, a set of criteria are established for awarding portions of the maximum number of points in each category to a job.

Certain of the evaluation factors can be unambiguously defined. Educational requirements, for example, can be defined in terms of years of school. The weighting system might assign two points for each school year, and five additional points for the completion of high school. A job requiring a high school diploma would then receive twenty-nine points for educational requirements.

Points for job characteristics with no such inherent scale of measurement are defined by reference to "benchmark" jobs. Benchmark jobs are carefully analyzed, defined in detail, and have had point totals assigned in each evaluation category. When the evaluation plan is applied, the evaluator looks for the benchmark which most closely resembles the job in question for the relevant attribute. Thus, for example, working conditions on a given job being analyzed are characterized as being better or worse than those on various benchmark jobs. In certain cases, there may even be separate benchmarks for different aspects of working conditions, such as heat, noise, weight lifting, and dirt.

The process of job evaluation consists in rating a job in each of the factor categories and adding the points across categories to determine point totals. This is typically done once for all jobs in a plant when a job evaluation plan is first introduced. Jobs are then reevaluated only when they are thought for one reason or another to have changed. New jobs are, of course, evaluated when they are introduced.

Table 1

Model Job Evaluation System

Factor		Maximum Points
Working Conditions		15
Noise	5	
Dirt	5	
Smell	5	
Responsibility for Equipment		25
Responsibility for Other Workers		20
Skill		20
Manual Dexterity	10	
Experience	10	
Education		35
Physical Effort		10
Total Points		125

Job Evaluation Points for Labor Grades

		Points		Points
Labor Grades	I	10-20	VI	61-75
	II	21-30	VII	76-90
	III	31-40	VIII	91-105
	IV	41-50	IX	106-120
	V	51-60	X	121 and over

The job evaluation point totals serve as a device for arranging jobs in a pay hierarchy. Jobs are generally grouped in labor grades, which span a range of job evaluation points. Thus, for example, jobs with point totals of ten to twenty might be assigned to labor grade I; twenty to thirty, labor grade II, and so forth.

In principle, it is possible to base actual wage rates upon job evaluation points. Thus, for example, each job evaluation point might be valued at ten cents an hour; a twenty point job would then receive a $4.00 rate. In practice, this procedure is almost never followed. Wage rates are assigned to labor grades rather than directly to the job or to the evaluation point total. This procedure reduces the effect upon the basic rate for a job of difference in individual evaluations or of the minor changes in jobs which inevitably occur over time. The ordinal structure which job evaluation establishes is converted into the actual cardinal wage structure through the community wage survey.

B. Community Wage Surveys and the Plant Wage Level

A community wage survey is not necessarily a representative survey of wage rates within a defined geographic area. Rather, it is a systematic procedure by which an enterprise appraises the appropriateness of its wage structure with respect to its major competitors for labor. The enterprise conducting the survey identifies wage rates paid for roughly comparable job classifications in a series of other enterprises, derives from these rates a target wage structure, and then seeks to adjust its own structure to the target wage structure.

A given "survey" can thus be characterized by two parameters: (1) the enterprises whose wages are surveyed, and (2) the job classifications selected for survey.

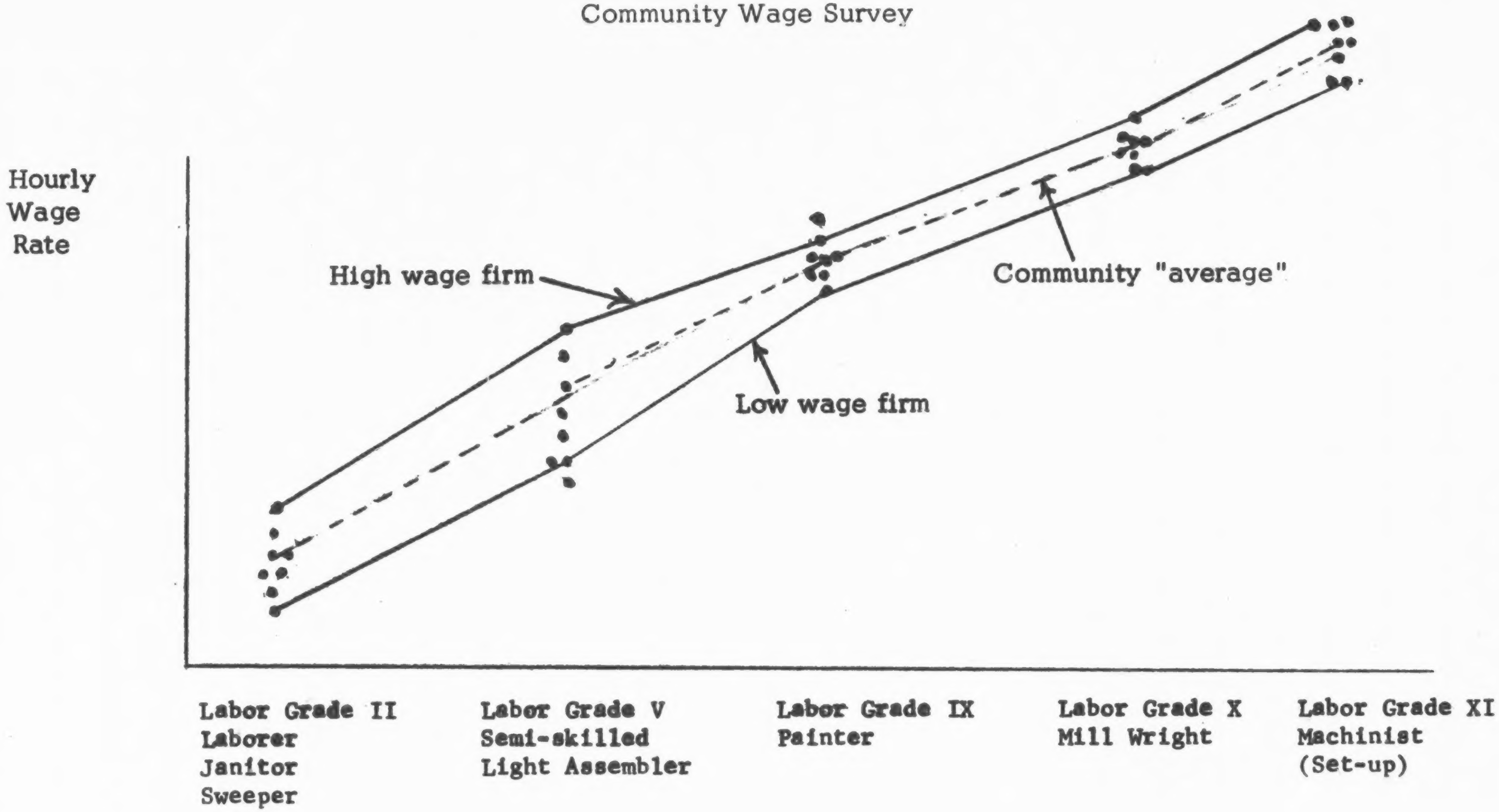
The enterprises surveyed, and the particular job classifications within these enterprises, tend to be constant over time. The criteria governing their selection are central to an understanding of the role of the wage survey. The group of enterprises selected tends to include both product market competitors and enterprises utilizing workers from backgrounds similar to those employed by the surveying plant. These enterprises are not necessarily direct competitors for labor, but they are usually highly visible in the labor market, and their wages are thought to affect workers' wage expectations.

Job classifications appear to be selected so as to insure, if possible, coverage of all labor grades. In practice, this means that all jobs which have close analogies in the surveyed enterprises are included. If cooperation can be obtained, the job evaluation plans of the enterprises surveyed may be used to identify substitute job classifications in labor grades for which there are no analogous jobs. In some cases, catch-all classifications such as "semi-skilled machine operator" are used to obtain comparability.

Generally, as much information as possible on compensation is sought. Data on straight time and overtime earnings, fringe benefits, and measures of the divergence between rates and earnings which might indicate the effect of incentive systems are often collected.

Figure 1

Community Wage Survey



The earnings data collected from the surveyed enterprises are often displayed on a graph like that shown in Figure 1. The wage scale is measured along the vertical axis. The labor grades of the plant conducting the survey are laid out along the horizontal axis. In each of the surveyed plants, the jobs whose wages are collected are assigned to one of the labor grades of the plant conducting the survey. This makes it possible to derive curves showing the wage structures of the various plants included in the survey. The target wage scale is then defined in terms of these curves, either in relation to the average wage scale over all the enterprises surveyed (e.g., "We pay at least ten per cent above the average for every job.") or as a range within the community (e.g., third highest paying plant; or among the top three). Supplementary information about fringe benefits is sometomes also displayed in this way and separate fringe benefit targets are developed. In effect, the enterprise is attempting to meet the "community," not only in wage rates, but also in vacations, holidays, retirement benefits, etc. In other cases, fringe benefits information is used to make rough adjustments in the target. For example, an enterprise plant may allow its wage rates to fall from third to fourth in the "community," arguing that its fringe benefits package is far superior to that of the third highest paying plant.

C. Engineered Production Standards and the Horizontal Differentiation of Wages

The wage rates attached to labor grades are based, in principle, upon the characteristics of jobs. The attributes of individuals holding the jobs are weighted only to the extent that the job requires these attributes, and all incumbents in a given job classification share the same basic rate. A number of enterprises, however, do make adjustments in wages for individual characteristics. These adjustments can be termed horizontal differentiation. Two techniques of horizontal differentiation predominate: merit rating and incentive systems.

Merit rating systems substitute a rate range for the single rate generally attached to each labor grade or job classification. Enterprises employing this system typically attempt to establish a set of uniform criteria for determining individual rates within the range and require supervision to review each employee periodically in the light of these criteria. The formal criteria almost always emphasize the use of merit rate progression as a reward for performance, but in practice, merit ratings tend to be highly correlated with length of service. This sometimes reflects on-the-job learning, but is more often indicative of a tendency for merit increases to become automatic.

On certain jobs it is difficult to distinguish between merit rating as a means of horizontal differentiation among individuals holding essentially the same job, and vertical differentiation among different jobs in a skill progression. This is especially true in craft jobs where it is common to have a hierarchy of subclassifications for the same craft. In such cases, the work performed by the different classifications tends to overlap, but movement between classifications, and hence pay rates, is based upon some formal review or test of individual skills.

The second common form of horizontal differentiation is "payment by results." The central feature of all such payment systems is that they reward output. Such systems vary widely from straight piece work, becoming increasingly rare, to complicated group incentives. Most common are individual incentives based upon engineered standards.

Time and motion engineering studies are used to determine the output of the average employee working at a regular pace. From this measure, a standard or base-line output is defined. The job incumbent is guaranteed the basic wage, as set through job evaluation and community surveys, for standard output and receives a bonus for output in excess of this standard. Incentive systems vary in their yield, but most standards are set deliberately low so that even the average worker makes some bonus.

II. Interpretation of Formal Wage Determination

It is frequently argued that the wage determination process outlined in the preceding sections can be interpreted, within a competitive economic framework, as a passive institutional procedure for expressing market forces. The instruments of wage determination may give the illusion of influencing wages independently of the market, but this is only because those market forces governing wage determination are relatively stable. Were these forces to change, the instruments would rapidly be adjusted.

Under this interpretation, the community wage survey becomes the principle transmitter of market forces. It provides wage data about market competitiors to which the internal wage structure can then conform. Job evaluation is a secondary instrument, designed to simplify the setting of wages by relating job classifications for which competitive data is obtained to job classifications not included in the survey. Similarly, horizontal wage differentiation permits the enterprise to reward differential productivity within job classifications, much as the competitive market is expected to function.

A more sophisticated version of the competitive interpretation takes cognizance of other functions of the instrument of wage determination. In this version, wage administration is concerned not only with expressing *short-run* market forces, but is part of a larger system of management control directed at enduring the *long-run* responsiveness of the enterprise to market forces. Without these instruments, supervisors might neglect labor forces under pressure of other responsibilities, or they might respond to immediate labor market conditions in a manner which would jeopardize the longer term profitability of the enterprise. Internally, an absence of some unifying control over wage decisions might lead to favoritism and wage inequities which would impair work force morale and productivity.

Community wage surveys encourage a regular reassessment of an enterprise's wage position with respect to other enterprises. Because the survey process is a continuing one, it also provides managers with a longer range perspective on the labor market which moderates the risk of short-run wage adjustments which are incompatible with the enterprise's long-run interests. Within the enterprise, job evaluation and engineered production standards ensure the establishment of uniform rates of compensation for similarly situated and similarly productive workers.

By encouraging response to long-run labor market forces, by continually examining the parity of internal and external wage relationships, and by encouraging standard wage rates within the enterprise, it can be argued that the control function of the administrative instruments of wage determination will closely approximate the predictions of competitive economic theory. A competitive interpretation of wage determination is, of course, congenial to economists because it permits administrative instruments to be neglected in favor of a direct analysis of market forces. The operation of these instruments of wage determination is also broadly consistent with this interpretation. The enterprises included in a wage survey do more or less correspond to those which would be in competition in an open labor market. Some firms are unwilling to cooperate with surveys because they may foster pirating of workers or of production techniques. The supremacy of the market forces reflected in the wage survey is further indicated by the practice of "fudging" job evaluation points to reconcile the internal wage structure with the structure of wages in the external market. Common techniques for circumventing an internal wage structure which is inconsistent with the external labor market involve re-evaluating jobs to produce the desired structure or adjusting rates within "merit" ranges.[1]

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[1] Fudging is most readily accomplished when a plan is first introduced. When a conflict develops after a system is in operation, it is necessary to assert that a job had changed in order to have it re-evaluated. If the natural evolution which jobs undergo over time is not sufficient to justify such an assertion, a sufficient change can generally be engineered.

The difficulty with competitive market interpretations of wage determination, however, is that they imply an inversion of the relative importance accorded to job evaluation and community wage surveys within the enterprise. Contrary to the expectations of competitive theory, wage administrators customarily give job evaluation far greater attention than community wage surveys. Internal consistency of wages receives much more circumspection than is the case with external wage consistency. As a general rule, conflicts between the rank order of jobs in the community wage structure and the order dictated by job evaluation are resolved in favor of the latter.[1] Fudging the job evaluation plans to produce wage adjustment in conformity with market forces occurs largely in response to market pressures so gross that no survey was required to uncover them, and large divergencies from target wage structures are tolerated for longer periods of time than are seemingly minor internal wage disparities. Moreover, examples are not uncommon where wage rates dictated by job evaluation are maintained in the face of conflicting market pressures. The conflicts are often resolved ultimately by automating the job or sub-contracting the work rather than compromising the evaluated wage structure.

The relative priority accorded job evaluation and wage survey results is paralleled by differences in the manner in which they are developed and applied. Job evaluation plans invariably represent a considerable investment of time and energy in development and negotiation. The initial introduction of a job evaluation plan is viewed as a major business decision, comparable to the purchase of an expensive piece of capital equipment, and it is not unusual for the evaluation of a single job to consume the full day of an industrial engineer. Although the procedure of job evaluation is acknowledged by most to lack scientific precision, it is nonetheless conducted with a seriousness and attention of detail characteristic of scientific work.

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[1] See Jack Stieber, The Steel Industry Wage Structure. (Cambridge: Harvard University Press, 1959).

By contrast, the construction and conduct of community wage surveys is cavalier. Uncooperative enterprises are avoided and large occupational gaps are often condoned. There is the concern that the surveys might be inadvertently biased by the limited selection of enterprises and job classifications. In short, survey procedures, the lack of concern with maintaining external wage parity, and the sanctity of internal wage relationships do not support a competitive interpretation of wage determination, except within wide limits. It is, therefore, difficult to avoid forces distinct from the competitive market. Wage surveys permit theenterprise to monitor the external market constraint and to make deliberate responses to it when appropriate, but the emphasis upon internal forces points toward an independent role of the internal labor market in the process of wage determination.

III. Technical and Market Constraints

This and the subsequent section of the chapter are devoted to the development of a theory of wage determination consistent with the formal wage setting process as outlined and interpreted in the preceding sections. The theory recognizes two sets of technical and market pressures upon the wage rate of a particular job: (A) External pressures generated by the factors emphasized in neoclassical theory but, given the existence of an internal labor market, not in themselves definitive, and (B) pressures deriving from the exigencies of internal allocation. Generally, these two sets of pressures constrain the wage structure and do not interact so as to yield a determinate structure but rather a range or family of feasible wage structures. In some cases, the constraints may conflict so that wage rates consistent with one set of constraints and inconsistent with the other. For example, most large enterprise internal markets have one or a few jobs (and sometimes a whole department) for which wage rates consistent with the internal labor allocation are seriously out of line with the external labor market constraint. The result is generally a series of trying, but not insurmountable operations and industrial relations problems. In the extreme case, however, the problems generated by conflicting constraints can drive a firm out of business. For most jobs, the constraints are more or less consistent with each other, leaving the particular structure to be determined by social and institutional forces operating within the constraint. A discussion of these forces is reserved for section IV.

A. The Neoclassical Constraints

The central results of neoclassical wage theory are twofold. First, an enterprise will pay each employee a wage commensurate with what he could obtain elsewhere. Second, the wage will be equal to the worker's marginal product. These results are dependent upon two assumptions seldom made explicit in the development of the theory: the absence of fixed employment costs and the temporary nature of the employment relationship. As was seen in Chapter II, both assumptions are generally abrogated by the internal labor market. Internal markets, tend to be accompanied by significant fixed costs of recruitment, screening, and training, and are designed to create a permanent relationship between the worker and the enterprise.

The formal implications of these changes have been worked out by Oi and Becker within the framework of competitive theory.[1] In that analysis, the presence of fixed employment costs create an incentive for employers to stabilize the employment relationship. While the two phenomena are treated together, fixed employment costs are the central focus and the permanency of employment is derivative or incidental. In the present context, however, it is useful to examine the two separately.

Fixed Labor Costs

Because fixed costs of recruitment, screening, and training occur in internal labor markets, wages (a variable cost) are no longer the sole component of labor costs nor are they the single variable controlling labor allocation. These fixed labor costs operate in several ways to introduce an element of indeterminacy into wages. They do so first because non-wage employment costs reflect the existence of instruments other than wages through which the enterprise can adjust to external labor market conditions. For example, in competitive theory the wages offered by competing employers establish the minimum wage which the worker will accept, but in the internal labor market, wages somewhat below the "market" can be compensated for through greater reliance upon recruitment, screening, and training expenditures. This implies that, where non-wage costs exist, the equality between wages and productivity predicated in neoclassical theory will no longer occur under competitive conditions. The marginal product of labor in the internal market must be sufficient not only to compensate the employer for wage costs, but also for non-wage expenditures on hiring and training.

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[1] See Becker, op. cit., and Oi, op. cit.

The second, and most important, implication of fixed labor costs is that they represent an investment by the employer in the incumbent work force. The payoff period on this investment is a function of the length of the employment tenure of each worker, and the replacement costs are incurred only when the employment relationship is broken. As a result, a variety of institutional arrangements are developed to encourage a permanent employment relationship among workers in whom the employer has invested heavily. The most significant of these arrangements is the internal labor market itself.[1]

For example, in an economy where many jobs are internally allocated, entry ports are often limited to the lower level jobs at the bottom of promotion ladders. Therefore, employees who have reached higher level jobs are generally earning well above the wages on entry jobs elsewhere. Turnover and interfirm mobility among such employees are therefore discouraged by the immediate earning loss which would result. This in turn implies that the wage rates on jobs filled through internal promotion are insulated from the direct influence of external labor market competition and that competitive market pressures upon the wage structure are felt almost entirely at entry level jobs.[1]

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[1] Other arrangements include work sharing and non-vested pensions.

A third consequence of fixed employment costs is that they endow the incumbent employee with bargaining power at the work place. As noted above, many non-wage labor costs are investments which the employer must make at the time of hire and which he incurs again only if the worker must be replaced. Once the investments are made, the threat of quitting provides employees with a bargaining weapon which may enable them to extract wages above their immediate marginal productivity. Where such bargaining occurs, its effect is to contribute further to the elimination of the equality between wages rate and productivity, even for entry level jobs. The administrative machinery surrounding the wage setting process and the consequent regularities in the wage structures may be understood partly as an attempt to forestall this bargaining.

In summary, when a permanent employment relationship is established as a result of fixed labor costs, profit maximization no longer compels the firm to equate the wage and marginal product of labor in every pay period. Following Becker, employers should be willing to pay a wage greater than the marginal product in early periods provided they are compensated by marginal product in excess of wages in some subsequent period. Correspondingly, workers should be willing to accept wages below those available to them elsewhere if they expect to receive higher wage payments later on. Factors such as the bargaining power of workers and the desire of employers to pay a wage increment to insure against turnover, both the product of employer investments in fixed labor costs, further interrupt the equality between wages and marginal productivity.

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[1] This is not to say that labor market competition will have no repercussions elsewhere in the wage structure. But the forces which produce these repercussions are not generally of the kind envisioned in neoclassical theory.

Permanency of Employment

Neither Becker nor Oi emphasized the startling implications for neoclassical wage theory of the permanent, employment relationship. As noted, when the employment relationship is permanent, neither employers nor workers necessarily concern themselves with the relationship between wages and marginal productivity at any point in time. There is instead a much more liberal, but nonetheless competitive, constraint that relates labor costs, earnings, and productivity streams over the employee's entire work career within the enterprise. As a result, there is a set of internal wage structures consistent with this constraint.

Where the worker typically holds a number of different jobs over the course of his employment life within the enterprise, this constraint implies little or nothing about the wage on any particular job. The disruption of the neoclassical equivalencies between the wage and the marginal product in each pay period, in other words, involves the disruption of these equivalencies for a given job as well. The worker, therefore, may never produce enough in a particular job classification to cover his wages during the period in which he is employed in that classification. Both worker and management decisions will, as a result, center upon a structure of wages over the series of jobs which the individual is likely to hold over his career in the enterprise, not upon particular wage rates. The wage structure, which in neoclassical theory results from a series of separate decisions upon job rates, becomes itself the focus of decision-making.

This is no doubt part of the explanation for the use of summary measures such as the "plant wage level" when wage decisions are being made. It may also explain the tendency of engineers, when designing or selecting capital equipment, to estimate labor costs by using an average wage rather than the rate for the particular workers by the equipment.[1] Since the jobs required by a given technology must be fitted into a promotion sequence within the plant, an average wage may be a closer approximation of the cost of the job than would the wage actually paid on it. If the actual wage on the new job is lower than the jobs it replaces, wages elsewhere in the sequence may have to be raised, and vice versa.

These results, which follow essentially from the permanency of the employment relationship, are indicative of a major divergence between neoclassical theory and the complications of the world which it seeks to describe. In theory, wages are paid to workers, as a factor of production. In many jobs in the economy, wages are not attached to workers, but to jobs, and much of the discussion of wage rates in this chapter actually refers to job rates. This distinction is not in conflict with traditional theory so long as one can argue that the rate paid for a job is really a reflection of the marginal product of the workers who hold that job. Such an argument is valid in a competitive market where a temporary employment relationship is assumed. It is not valid in the internal labor market. In that market, neoclassical analysis does not provide a theory of wages. It provides, at best, a theory of income. And, in fact, it is toward an analysis of income that Becker's analysis is directed.

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[1] A discussion of this process is presented in Chapter VI.

Finally, it should be noted that, even at entry ports where it would seem most likely that wage rates and worker productivity should be closely related, employment and wage decisions generally apply to groups of workers rather than to individuals. The group may be defined by characteristics such as age, race or education as is common at entry ports, or by seniority and job classification, as in the case of jobs filled internally. When wage determinations are made for goups of workers, the influence of economic constraints--labor costs, productivity, and so forth--is estimated in terms of the expected value for the group as a whole and not for individual workers. As a result, the productivity of some individuals drawn from any particular group is likely to differ from the expected value for the group. Some workers will therefore receive wages below their individual productivity and some will receive wages above it. Thus, a worker who produces more quickly than the average seldom reaps the full gains from this, but rather he subsidizes the worker who produces less than average. Similarly, the worker who stays with an employer longer than average tends to subsidize the fixed employment costs of workers who stay for less time.

The linkage of wages either to the output or to the seniority of the individual worker reduces these effects, but probably does not eliminate them. Their existence implies that changes in the groups from which employers customarily hire or changes in precision with which individuals can be classified into groups will effect the expected value of variables such as productivity and training costs, and may require basic changes in the wage structure.

In sum, the forces which in neoclassical theory yield a determinate wage establish, in the internal market only a series of constraints. The equality between the marginal product of labor and the wage of a job postulated by competive economic theory is reduced to an equality between the discounted present value of expected cost and productivity streams calculated over the distribution of expected employment tenure for various groups within the enterprise. Wage payment is not tied to individual productivity and wage rates are applied to jobs more often than to workers. Such constraints are consistent with a variety of different wages for any particular job and a variety of internal wage structure as well.

The other important neoclassical wage determinant, the wage on alternative employment opportunities, is also not a binding constraint.

The employer can meet competitive pressure upon his wages through compensating. adjustments in recruitment, screening and training. Moreover, where internal markets are widespread and many of the higher paying jobs in the economy are allocated internally, employees in non-entry jobs in one enterprise often have access only to entry level jobs in other enterprises. The latter will often pay substantially less than those which the employees currently hold and, as a result, turnover will be discouraged.

B. Internal Allocative Constraints

The firm's commitment to internal allocation of labor according to a set of administrative rules places a second set of constraints upon the internal wage structure. The wage on every job must be high enough relative to the job or jobs from which it is supposed to draw its labor and low enough relative to the jobs to which it is supposed to supply labor to induce the desired pattern of internal mobility. The actual limitations which these constraints place upon wage rates depend upon several factors.

They depend first upon whether internal movement is voluntary or mandatory. In most blue collar employments, permanent job vacancies are filled voluntarily. The employer posts the vacant job, interested employees bid for the vacancy and the job is filled from among those bidding according to criteria such as seniority and ability. Wage rates, however, need not necessarily rise with rank in the line of progression in order to induce bidding. Superior working conditions, overtime opportunities, or the like may render a job more attractive than those below it and compensate for lower wages. The attraction of higher level jobs which are accessible only through service in the job in question can also compensate for lower wage rates. The attraction of higher level jobs which are accessible only through service in the job in question can also compensate for lower wage rates. But there is clearly some wage rate for each job below which the desired bids will not be forthcoming.

When movement is mandatory, employees can always be compelled to change jobs, and the wage structure is not so tightly bound by internal allocative requirements. But mandatory moves which are, from the employee's point of view, inadequately compensated, are generally bad for employee morale. Where poor morale is thought to have an adverse effect upon productivity it tends to push the wage structure in a direction conducive to voluntary acceptance of forced moves.[1]

Mandatory upgrading is uncommon for blue collar jobs, although not for management jobs.[2] Mandatory movement is the rule, however, for reductions in force. The senior worker typically bumps down to a lower level job displacing the incumbent who either then bumps a still more junior worker, or is laid off. One of the effects of such mandatory movement is that enterprises experiencing long term declines in employment often face pressure from employees to push the bottom of the wage structure upward.

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[1] Views about the relationship between productivity and morale vary, but in blue collar jobs they are generally related through the effect of morale upon the propensity to strike; in white collar, especially managerial jobs, the effects are probably more direct. If they exist at all, and most firms seem to believe that they do. See, for example, Douglas McGregor, The Human Side of Enterprise (New York: McGraw-Hill, 1960), but also see Robert L. Kahn and Nancy C. Morse, "The Relationship of Productivity to Morale," Journal of Social Issue, Vol. III, No. 3, 1951; and William J. Goode and Irving Fowler, "Incentive in a Low Morale Plant," American Sociological Review, 1949, pp. 618-624.

[2] See Theodore Alfred, op. cit.

The preceding discussion has been carefully phrased to leave open the options, in cases of conflict between the internal wage structure and the internal allocative structure, of revising the allocative structure or abandoning internal allocation in favor of direct hiring from the external market. The forces determining the viability of these options constitute another set of factors governing the relationship between the wage and the allocative structures.

Because wage structures and allocative structures must be consistent, changes in the wage structure can be used as a strategic instrument to induce changes in the allocative structure. For example, changes in technology may impair the effectiveness of traditional on-the-job training sequences. Reevaluation of the affected jobs may then be used as a device for altering the internal wage structure to make it consistent with desired promotion sequences instead of actual promotion sequences. Thus apparent conflicts between the two structures at a particular point in time may only indicate a deliberate policy of adjustment in patterns of internal labor allocation.

The reasons for adopting such an indirect strategy are to be found in the employee expectations and customs which form around internal allocative structures. For example, changes in rules governing internal allocation often involve a redistribution of employment rights within the internal labor force which, in turn, may generate internal dissension within the labor force. Union leaders may therefore prefer to permit changes in the allocative structure to be made implicitly through changes in the wage structure rather than through explicit bargaining concessions. While the labor force is not easily deluded into accepting major structural revisions, minor revisions can sometimes be made acceptable in this way. The nature of customary law also favors this strategy: a change in the wage structure which induces even minimal movement between jobs which were not previously related may create precedents that at some later date can be used to justify formal changes in the allocative structure. Absent these procedents it might be impossible to gain worker acceptance of formal change.

While changes in the wage structure may be used as strategic devices to facilitate minor changes in the allocative structure, the allocative structure is, in general, more appropriately viewed as a constraint upon the internal wage structure. In particular, it is one factor which inhibits the responsiveness of the internal wage structure to external competitive forces. The effectiveness of this constraint will vary with the strength of the forces that promote internal allocation in the first place. For these purposes, the several forces identified in Chapter II may be divided into two groups: those which have to do with efficiencies in the recruitment, screening and training, and those which promote the internal labor market because of its value to the internal labor force.

To a certain extent, allocative structures generated by the latter group of forces are determined by the wage structure. The internal market is designed to assign the "better" jobs to certain specific (generally senior) groups of employees, and the quality of the job in the eyes of the labor force is in part a function of the wage. Hence, if a change in the wage structure means that senior workers find a different set of jobs more attractive than those which they were previously encouraged to choose, their interests may continue to be as well served by having the newly preferred jobs placed at the top of the previous promotion sequence. Where this can be accomplished, the allocative structure cannot, in any meaningful sense, be termed a constraint. There are, however, few cases in which worker preferences are as simple as the preceding example suggests. In general, workers are not only concerned with wages but with working conditions as well. When workers are reluctant to substitute higher wages for these other characteristics--when, for example, the allocative system is designed to give senior workers not only the highest paying jobs in the plant, but also the job having the least adverse impact upon their health--the allocative structure may again become a meaningful constraint.

For allocative structures dictated by economies in recruitment, screening and training, the wage is constrained not only by the jobs above and below it in the standard promotion sequence, but also by the wages of workers in other promotion sequences or workers in the external market who constitute alternative sources of supply. If alternative sources of labor are used the wage on the job to be filled must be at least sufficient to induce movement, but low enough to compensate for the costs of recruitment, screening and training in excess of those imposed by the normal promotion pattern. Because allocative structures are so complexly interrelated, however, these incremental costs usually extend somewhat beyond those incurred in filling the specific vacancy. They may also include additional training to fill positions to which the vacant job normally leads; or there may be additional costs in filling vacancies created in the promotion sequence from which the alternative supply is drawn.

A third allocative factor affecting the internal wage structure is the shape of the internal mobility clusters. Their shape affects the number of candidates for a job: when this number is small relative to the number of vacancies to be filled, the wage rate required to induce the requisite movement will depend heavily upon the preferences of the particular individuals, or group of individuals, holding the jobs from which labor is drawn. For example, in the case of the line of progression consisting of a single job at each rung, the wage necessary to fill a job vacancy will depend upon the preferences of the incumbent in the job below it. Were management always able to set the minimum wage consistent with movement along this line, the wage would fluctuate with each vacancy. As will be seen shortly, the continual adjustment in the wage structure which this implies poses difficulties, and management generally sets a wage differential high enough to be consistent with the preferences of most of the workers occupying such jobs over the long run. As the job structure deviates from this extreme case toward a pyramidal structure in which the number of candidates is large relative to the vacancies to be filled, vertical wage differentials depend less upon preferences of particular individuals than upon those of individuals most anxious to accept promotion. Consequently, vertical wage differentials tend to be narrower.

IV. Social and Institutional Constraints

The preceding section has identified a series of factors which, in one way or another, influence or constrain the internal wage structure. Under certain circumstances these constraints severely limit the wage structures, but only rarely do they establish a unique rate structure. In general, the factors identified in the preceding pages yield a set or family of wage structures. Consequently, an alternative to the competitive market mechanism must be developed to determine a single internal wage structure and to resolve conflicting pressures when they arise. One mechanism is implicit in the assumption that firms attempt to minimize costs (or maximize profits). This assumption implies that the firm will weigh each of the variables impinging upon costs and select the wage structure for which total unit costs are at a minimum. This mechanism is, however, deficient in two respects. First, many of the relevant variables are dependent upon the preferences of one or a few individuals. To minimize costs, therefore, management must devise either a system for discovering these preferences or at least, a rule for action in the face of uncertainty.

Second, given the constraints upon wage determination discussed in the preceding sections, the cost minimization assumption implies that the wage structure will be adjusted every time one of the variables impinging upon it changes. In a world of continual flux, this would make the wage structure considerably more volatile than it in fact appears to be. Typically, wage changes occur at discrete intervals--annually in many enterprises and at longer intervals in some organized plants. Therefore, if the assumption that cost minimization governs the wage determination process is correct, there must also be costs to making wage adjustments and these too must be identified before the process can be completely specified.

The identification of both worker preferences and wage adjustment costs raises problems extending considerably beyond the internal market and cannot be fully explored here. But the internal market, and the factors associated with it do influence both preferences determination and adjustment cost in significant ways. The result is to make the internal wage structure rigid and to inhibit its response to changes in economic or institutional constraints.

A. Determining Worker Preferences

The problem of determining preference is inherent in any economic transaction and, in this sense, every system of exchange is predicated upon some resolution of it. One such resolution is market competition. When the number of buyer and sellers in a market is large, or when the transaction is consumated through an auction, mechanism, each individual is forced to reveal his true terms of settlement. As competition recedes, exchange deteriorates into a bargaining game: the individual attempts to hide his true preferences from his adversaries on the other side of the market in an attempt to induce them to settle on more favorable terms.

Bargaining

Bargaining carries with it certain costs. There are the costs of the bargaining process itself and the costs of failing to reach an agreement. The latter costs will depend upon the particular bargaining situation. In union management negotiations, for example, it is the cost of a strike; in international relations it is often the costs of war. The former set of costs consist of the time and energy required to settle the bargain. When these sets of costs loom large, an alternative means of settling upon a price will be to the advantage of the parties.

The internal market operates to raise the costs of bargaining. First, it restricts the number of candidates for a given job and hence reduces the pressure which competition places upon the parties to reveal their terms of settlement. In the extreme case where strict seniority determines promotion along a line of progression one job wide, the internal market dictates a pure bi-lateral monopoly. But in the more typical allocative structures, the internal market simply increases the probability that management will be forced into individual bargaining either because the pool of potential candidates begin to form bargaining alliances or because they no longer fear each others competition. Thus, to the extent that there are costs to bargaining, the internal market increases the likelihood that management will incur these costs.

Fixed Labor Costs

The second effect of the internal market derives from the fixed labor costs which tend to accompany it. Such fixed costs are a major component of the costs of failing to develop a wage structure which induces efficient promotion patterns. These costs are most obvious when the failure leads the preferred candidate to quit the enterprise and a replacement must be hired. But certain fixed costs are also incurred when the preferred candidate simply refuses to accept promotion. In a line of progression, for example, training costs, and occasionally screening and recruitment costs as well, are reduced because the preferred candidate generally has the most experience working around the next job in the line and in filling it temporarily. The higher the additional fixed labor costs associated with filling a vacancy from a less preferred source, the more likely is the employer to set a wage differential high enough to ensure against a preferred worker rejecting a promotion.

Fixed labor costs may also increase the time and energy required by the bargaining process even when satisfactory wage agreements are concluded with preferred candidates. The higher the level of fixed labor costs the greater the range between the maximum which the employer should be willing to pay before the alternative candidate looks preferable and the minimum the worker will accept before an alternative job will be accepted. Since both the number of possible settlements and the gains to the parties increase as this range expands, the difficulty of reaching an agreement would seem to increase as well. On the other hand, this effect may be counterbalanced by the costs to both parties of failing to reach an agreement, which should also rise with the level of fixed labor costs, and which should hasten the parties toward settlement.

On-the-Job Training and Job Specificity

The third effect of the internal labor market upon the cost of bargaining arise from on-the-job training and from job specificity. These, of course, tend to raise fixed labor costs and thereby affect the cost of bargaining as noted above. But they also have an independent effect upon bargaining costs generated by the strong bargaining weapons that they place in the hands of the experienced labor force. The effectiveness of on-the-job training depends heavily upon the willingness of experienced workmen to teach new workers. Incumbent employees are thus in a position to frustrate this training process simply by hiding what they are doing from the workers around them. In some cases, the employer can substitute alternative, if more expensive, training processes, but, in many cases, there are simply no alternatives. The cost of efforts to frustrate on-the-job training moreover is frequently compounded by the fact that such training tends to occur automatically in the process of production and any effort to stop it from occurring has an adverse impact upon efficient plant operation.

Job specificity operates in a similar manner. When the job is specific, the workman, as has been seen, tends to have a monopoly over a portion of the knowledge required to maintain and operate the technology. The importance of experienced workmen in the process of on-the-job training stems in part from this monopoly. But the monopoly also gives independent power to disrupt the production process. Given the fact that the technology is unwritten, and that part of the specificity derives from improvements which the work force itself introduces, workers are in a position to perfect their monopoly over the knowledge of the technology should there be an incentive to do so.

These characteristics of on-the-job training and of job specificity place a premium upon the development of wage setting procedures in which the labor force does not have an incentive to exercise its bargaining power. It may be noted that both also tend to promote procedures which avoid competitive processes for internal wage determination because, in a competitive wage determination system, the incumbent workers have an incentive to exercise their monopoly of training and skill to the detriment of both the firm and other employees.

Alternatives to Bargaining and Competition

Thus, in summary, the internal labor market operates to eliminate competition for internal vacancies--or, perhaps more accurately, arises under circumstances of reduced competition. As competition recedes, the choice is between the determination of wage rates through individual bargaining (the "haggle system" as it is called in some plants) which is inherently costly, and some alternative procedure which would establish rates acceptable to the parties without the time and energy demanded by bargaining or threatened exercise of economic weapons inherent in it.

To a certain extent, the formal instruments and procedures of wage administration may be understood as such an alternative. Their quasi-ethical character and the laborious process through which they are applied lends to them a certain aura of legitimacy and makes them appear as "natural" a manner of wage determination as competition and bargaining. To this extent, adherence to the formal procedures comes to be valued quite independently of whatever economic forces it expresses. This permits these procedures to continue to dictate the wage rate even when they come into conflict with these forces, although at some point the cost of complete adherence to them will outweigh the costs of the bargaining process which they are designed to circumvent and the procedures will be modified or abandoned. Though limited by economic forces, the formal procedures of wage determination can and do exert an independent influence upon wages. However, the set of rules upon which the parties rely to avoid the bargaining process is not limited to those formalized in the wage setting procedures outlined in the beginning of the chapter. Rules based upon work place customs are also operative and probably exercise a more important influence than formal procedures of wage determination. For some purposes, the latter may even be viewed as merely a formal expression of customs.

B. Social Determinants of the Wage

While the cost of bargaining imposed by the internal labor market dictates an institutional solution to the wage setting problem, the particular form which that solution takes cannot be understood without reference to the series of social constraints the wage setting process operates. The social constraints are the product of custom, or customary law, strengthened by the role of wages and earnings as an indication of social status and by the operation on the individual level of the psychological phenomena which works to generate custom and the group cohesion which supports it.

1. Custom and Wage Determination

Within an internal labor market, wage determination, like other industrial relations rules becomes the focus of customs. The nature and effects of custom have been described generally in Chapter II, and its effects upon wage setting follow from that description. Any wage rate, set of wage relationships, or wage setting procedure which prevails over a period of time tends to become customary; changes are then viewed as unjust or inequitable, and the work group will exert economic pressure in opposition to them. In a static world, custom would undoubtedly come to center upon the actual wage rate paid for each job and any wage would thus become costly to change. The modern industrial economy does not experience this kind of stability, and custom tends to grow up around wage relationships rather than around specific wage rates.

The tendency for the rate and frequency of wage changes to become customary is often cited by management as one of the reasons why community wage surveys are not universally used. Managers apparently fear that regular patterns of wage change once established would become obligatory.

The role of custom in governing the wage structure also appears responsible for the nature of job evaluation procedures and the priority accorded to job evaluation by most managements. Basically, job evaluation is designed to reduce the conflict between custom and allocative constraints by directing the attention of the work force, and thereby the focus of custom as well, to the characteristics of the job rather than to its place in the job structure of the enterprise. It thus becomes possible to change the position of individual jobs in the wage structure in response to changes in job content.

The strictness with which internal rank order is maintained and the relative flexibility of management to change wage differentials reflects the ambiguity of past practice. The historical rank order of jobs in wage structure is not open to dispute. In a fluctuating economy, however, it is generally unclear whether wage relationships are fixed in percentage terms or in absolute terms, and this ambiguity permits occasional adjustments in wage structures to be dictated by wage surveys. A practice of continually varying wage differentials would, of course, enhance this ambiguity. But managers who do not exercise the latitude for wage variability and who fall into the practice of granting wage increases on the same percentage or cents per hour basis acorss the board find the practice difficult to break when economic forces dictate a change.

The ambiguity of precedent is also a factor in the resolution of conflicts between the internal ordering dictated by the job evaluation and the external ordering of community wage surveys. The multiplicity of external reference points and the variety of different economic pressures to which they are subject generally makes for less stability in external than in internal wage relationships. It is generally possible to point toward some employers with whose wage rates the historic relationship is maintained even when the relationship with other external rates is being broken.

2. Social Status

A second factor operating to strengthen the influence of custom upon wage determination is the role of income as an indicator of social status. Income probably plays this role to a greater or lesser degree in every industrial society but it is widely held to be more important in the United States, where a strong class tradition is lacking, than in countries with a feudal heritage.[1] The linkage between income and social status has a variety of implications for the wage structure which may be briefly summarized here. First, social status is required for effective performance of certain jobs and the income level required to yield the requisite status is an important wage determinate. Thus, for example, workers whose jobs involve the direction and management of others must typically be paid more than their subordinates in order to perform this function effectively. This is recognized in many job evaluation plans by according weight to "the degree of responsibility for other employees." Another example of the same effect arises where the workers responsible for training feel their status threatened by the trainees.[1] As a result the training process operates effectively only if the wage determination process protects the status of incumbents by according considerable weight to seniority. These internal status effects constitute an important factor militating in favor of maintaining the existing internal wage structure when it is inconsistent with wages in the external market.

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[1] Barbara Wooton, The Social Foundations of Wage Policy (New York: W. W. Norton and Co., 1955), pp. 25-32. Also Duesenberry, *op. cit.*

Second, there are occasionally wage relationships which are dictated by the status of a job which management is forced to recognize even though the job characteristics orginally associated with the status are no longer present. This is most likely to occur in internal markets with promotion lines leading to jobs that are considerably more attractive than the entry level jobs. Workers in such promotion lines develop expectations about promotion opportunities. Should technological change dilute the content of these better jobs, management cannot reduce their rank in the wage and allocation structure without frustrating worker's expectations and adversely affecting morale. The effect of changing the status of jobs and violating expectations is very much like that of a violation custom but is stronger because of the economic value placed upon status. The steel industry is a case in point. It is an old industry in which job classifications such as "roller" carry a long history of high skill and prestige. The nature of many steel jobs has recently been changed in major ways by automation, but ranking of job classifications in the internal wage structure has not undergone a comparable change. Technically, what appears to have happened is that a decline in skill content was counterbalanced in job evaluation by an increase in responsibility of the job, but the coincidence is suspect.[1]

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[1] One such illustration is the threat posed to older, unmarried clerical and secretarial help by pretty young girls.

Third, the role of income as a determinant of status is important in the interpretation of community wage surveys. It implies that these surveys, in addition to reflecting the wages of labor market competitors, also are used to maintain the status of the enterprise in the community. Comments by managers in some plants suggest that the status which employment with the company confers upon its employees was considered the major factor in its ability to recruit labor and that community surveys were primarily designed to maintain employer status.

The sample of plants in the survey was thus literally a sample of the employer community rather than of the labor market as narrowly conceived, thereby explaining, in part, the inclusion of employers whose economic relationship to the surveying firm was obscure. The role of the survey as an indication of company status also explains why wage adjustments indicated by surveys are readily ignored when they conflict with internal pressures. Departures from the target wage position in the community on one or a few jobs, or temporarily even for the plant as a whole, were considred unlikely to affect the company's general reputation.

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[1] See Stieber, _op_. _cit_.

3. Interdependent Utility Functions

The constraints imposed by group pressures to accede to customary law are augmented by responses to workers, as individuals, which operate in the same direction. Individual responses are derived from the same behavioral principles which control habit formation and imitation within groups. The most important implications of these responses for an understanding of wage behavior in an internal labor market may be summarized in two propositions. First, the utility of income to an individual depends upon the income of those with whom he comes into frequent contact, and the impact of the income of any particular individual upon the utility of another is a function of the frequency between them.[1]

Second, workers become accustomed to certain levels of income relative to the income levels of those around them, and it becomes considerably more important to maintain these income levels than to exceed them. This proposition follows from the principle of habit formation, and the variety of habits of behavior and thought associated with relative income levels. Because of its dependence upon habit, the importance of maintaining a given relative income level is a function of the length of time it has been maintained.[1]

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[1] This effect derives from the tendency of individuals to imitate the behavioral pattern of those around them, and the fact that insofar as those behavioral patterns are dependent upon consumption expenditures, imitation is constrained by income. See Duesenberry, op. cit.

Thus, for very much the same reasons that the individual attempts to ward off threats to his relative consumption pattern by reducing his savings, he will also attempt to ward off such threats by exerting pressures at the work place for wage increases. Such pressures may range from complaints to his foreman or shop steward to participation in group action, but all create a tendency for wage rate relationships to be stable and pressures to restore relationships whenever they are disturbed.

In the context of wage determination, the amount of individual pressure for maintaining customary parity of wage relationships is a function of the frequency of contact among the individuals holding those jobs. For the internal wage structure, this means that there will be an especially tight relationship among the wages of jobs whose incumbents have regular and frequent contact at the work place. It also suggests that jobs which involve wide contacts with other workers acquire a strategic position in the internal wage structure which make it impossible to change their wageswithout adjustments throughout the system.[1]

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[1] It may be noted that postulating a drive toward higher social status, both propositions can be derived from the role of income as a determinant of social status. This, rather than imitation, is the foundation of these effects in Duesenberry's theory of consumption and saving.

Comparable phenomena govern the relationship between the enterprise wage structure and that of the community. An enterprise is under particular pressure to maintain wage rate parity between itself and those enterprises employing the relatives and neighbors of its work force. Large enterprises will therefore tend to dominate community wage movements through demonstration effects even if they are not competitors in either the product market or the labor market.

V. Summary

The argument of this chapter may be summarized as follows: in the internal labor market, wages are administratively termed either by the formal procedures of job evaluation, community surveys, merit rating and industrial engineering studies, or through less highly structured procedures which, nonetheless, appear to be similar in character and in effect. The procedures of wage administration could be interpreted as the institutional form through which the market forces identified conventional neoclassical theory achieve expression. Several features of the wage setting process, however, particularly the priority accorded internal relationships determined by job evaluation relative to the external relationships which community surveys define, are not easily reconciled with this interpretation.

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[1] Dunlop calls these internal patterns wage clusters and key jobs respectively. See John T. Dunlop, "The Task of Contemporary Wage Theory," in Taylor and Pierson, op. cit. It is to be noted that the individual psychology from which they are here derived makes it likely that they will exist in any employment situation: the stability of employment in the internal market, however, increases the frequency of contact and strengthens the habits upon which the effects depend and thus enhances these effects relative to other wage determinants.

An alternative interpretation has been developed in this chapter. When internal labor markets are present, the competitive forces emphasized in neoclassical theory place certain constraints upon the wage structure, but, in general, do not establish a unique wage rate for each job. Enterprises with internal markets are able to meet labor market competition through recruitment, screening and training expenditures as well as through wage and employment adjustments so that a number of different wage structures are consistent with the same labor market conditions. More importantly, the job specificity and the stability of employment which the internal market is designed to achieve abrogate the necessity for the profit maximizing firm to equate wages and marginal productivity in all job classifications, or even over the job tenure of all workers. These need not be equated in any pay period or on any particular job classification.

The rules governing internal allocation place certain additional constraints upon the wage structure. These sometimes narrow the range of feasible wages left by the traditional neoclassical constraints, but, except in unusual cases, individual wage rates remain indeterminate. The internal allocative rules, moreover, generally complicate the problem of selecting a wage within the permissible range. The restrictions which they impose upon the number of job candidates encourages individual bargaining or competitive bidding, either of which is expensive.

The institutional wage setting procedures are to be understood as a less expensive means of arriving at a determinate set of wage rates. The particular form which these procedures take, however, is greatly influenced by the social forces of custom and the role of income as an indication of social status and by related individual behavioral phenomena.

CHAPTER V

MANPOWER ADJUSTMENT AND LABOR MARKET IMBALANCES

In this chapter, the process of adjustment to labor market imbalances is examined. Both technological change and tightening labor markets pose essentially the same adjustment problem for internal labor markets. To an enterprise attempting to maintain a balance between its staffing requirements and the skills available on the external labor market, technological change is largely an exogenous factor affecting internal labor requirements; tightening labor markets are an exogenous change in the external availability of labor. In either case, manpower adjustment policies must be implemented so as to maintain a reasonably efficient balance between the internal and the external labor markets. Manpower adjustment policies are discussed in this chapter in terms of the problems posed by a tightening labor market, but the analysis can be generalized to include problems of adjustment to technological change.[1] Most of the materials in the chapter relate to enterprise internal markets for blue collar personnel. Except where indicated, the discussion is not necessarily applicable to other types of internal markets.

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[1] The choice is made largely for expositional reasons. The discussion of adjustment of technological change is complicated by the fact that not all changes are exogenous. Some features of the adjustment proces unique to technological change are discussed in Chapter VI.

I. Instruments of Adjustment Within the Enterprise

An enterprise is signaled about changes in external labor market conditions in two ways: through the rate of turnover among incumbent workers and through the flow of applicants for its jobs. As external conditions change, the amount and the composition of job applicants will systematically vary. Turnover patterns will exhibit similar variations. An enterprise can adjust to such variations through a variety of instruments. Two of these instruments, the level of wage rates and the number of workers employed in various jobs, are conventionally recognized in economic theory. For an analysis of labor market adjustments when internal markets are present, however, explicit recognition must be given, at a minimum, to eleven instruments of adjustment:[1]

1. wage and non-wage compensation
2. internal allocative rules
3. the job structure
4. managerial procedure
5. job vacancies
6. subcontracting
7. overtime
8. hiring standards
9. recruitment procedures
10. screening procedures
11. training

These instruments constitute alternative modes of adjustment to external market conditions. For example, an enterprise might raise wages when faced with increasing turnover and a declining quality and quantity of job applicants in a tightening labor market. Alternatively, it might attempt to attract more candidates at existing wages by changes in its recruitment procedures, or it might screen candidates more carefully to identify those actually qualified but rejected by cruder methods of assessing qualifications; or it could reduce hiring standards and accept candidates who are actually less qualified than those whom it is accustomed to hiring in a looser external labor market. The last policy could be combined with training, changes in the job structure, or new managerial procedures so as to ensure previous levels of output and quality. Or a sacrifice in output and quality might be accepted as a part of the policy.

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[1] See also, Peter B. Doeringer and Michael J. Piore, "Labor Market Adjustment and Internal Training," op. cit., and Peter B. Doeringer, "Enterprise Adjustments to Labor Scarcities," in Proceedings of the International Conference on Employment Stabilization in a Growth Economy; Organization for Economic Co-operation and Development, Manpower and Social Affairs Directorate, 1968.pp. 261-77. and Michael J. Piore, Technological Change and Structural Adjustment In the Labor Market, Unpublished doctoral dissertation, Harvard University 1966.

The instruments through which enterprises react to the external labor market have various implications for the nation's social and economic goals. Reacting to labor scarcities by increasing wages, without accompanying adjustments in other instruments such as training, may produce an inflationary wage spiral without relieving much of the underlying scarcity of labor **in the short run.** Reductions in hiring standards may increase employment and change the distribution of employment opportunities among various social groups, but only at some sacrifice in labor productivity. Improved screening procedures can produce similar employment effects, but without impairing productivity. The combination of changed hiring standards and increased training could achieve these employment effects and, at the same time, increase labor productivity, at least over the long run. Skill saving adjustments in job design through technological change may require an increase in the level of investment which might, through its impact upon aggregate demand, create further labor market stringencies.

It originally seemed that it would be possible to identify some relatively simple, recurrent patterns of labor force adjustment within the enterprise. One hypothesis was that the instruments of adjustment would fall into a clearly defined cost hierarchy. As the external market tightened, the enterprise would be forced to adopt progressively more expensive adjustment instruments within this hierarchy. For example, an enterprise might expand recruitment procedures as the unemployment rate falls from 5.5% to 5% and then utilize adjustments in screening procedures as well as unemployment falls from 5% to 4.5%. A second hypothesis was that the sequence of adjustment patterns would prove similar across enterprises.

Neither hypothesis could be substantiated. The mix and sequence of instruments varies considerably among enterprises. As a general rule, combinations of instruments will be used at any one time. Some of this will remain relatively stable over long periods of time, others will vary systematically with external labor market conditions. Selection among these instruments reflects estimates, often of an intuitive sort, of their relative costs and benefits.[1] There were, nonetheless, certain features of the adjustment process common to all, or most, of the enterprises studied. Broadly speaking, these common elements fell into two groups: (1) shared characteristics of the decision-making process through which adjustments were made and (2) similarities in the nature of the variables affecting the choice among the adjustment instruments.

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[1] A discussion of these estimates is presented in the Appendix to this chapter.

II. The Decision-Making Process

Perhaps the most notable features of the decision-making process is that management makes little effort to anticipate staffing bottlenecks, either for entry jobs or along internal lines of promotion. Many large and otherwise sophisticated companies do not engage in manpower forecasting or planning for any segment of their labor force. Those few which do are primarily concerned with managerial personnel.[1] The lack of even rudimentary manpower planning can be partly ascribed to the long period of relatively high unemployment during the late 1950's and early 1960's. Those companies which are now beginning to develop rudimentary manpower forecasts are doing so under the pressure of the continuing tight labor markets of the mid 1960's.

As a result, variations in labor supply are often met by unplanned and often ad hoc policies designed to overcome immediate labor shortages or to absorb unanticipated labor surpluses that the enterprise company chooses to retain. The procedures for developing adjustments to the tight labor markets of the late 1960's are apparently similar to those utilized in World War II and Korean periods.

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[1] Peter B. Doeringer, Michael J. Piore, James G. Scoville, "Corporate Manpower Forecasting and Planning," The Conference Board Record, Vol. V, No. 8 (August 1968)pp. 37-45.

1. Innovations in Adjustment Techniques

A second aspect of adjustment decisions is that each enterprise appears to have a series of customary adjustment strategies which it follows automatically in response to various internal and external signals of labor scarcity. For example, as the external market tightens, an enterprise will follow a fairly standard sequence of changes in recruitment procedures, moving from reliance upon unsolicited gate applicants to advertising in metropolitan newspapers and on the radio. It will strengthen contacts with the public employment services, the school systems, and social or religious organizations. Some companies will also pay bonuses to employees for referrals. Similarly, enterprises frequently have training or apprenticeship programs which they can activate in response to market conditions. One such example is the "temporary skilled trades" classifications in the automobile industry mentioned in Chapter III.

These customary strategies of adjustment may fail, or become too costly, forcing management to search for new strategies. The search is not very different from that for new techniques of production. It proceeds to a great extent by trial and error, and it takes time. In the case of recruitment, for example, search may involve contributing instructors, equipment and financial assistance to local schools in the hope that recruitment of their graduates would be facilitated. Other companies may initiate recruiting arrangements with ethnic churches and civil rights organizations for the recruitment or recent arrivals to the community.

Because the development of these new techniques takes time, enterprises are often forced to utilize temporary, short-run adjustments which are more costly than those adopted in the long run. This point is of some importance in judging the inflationary response of the economy to tight labor markets. It is likely that the long run adjustment response to a given level of unemployment will be less costly than the response when that level is first approached. Such is especially likely to be the case when a tight labor market occurs after a long period of looser markets during which the efficacy standard adjustment techniques have not been tested.

2. Constraints Upon Adjustment

Finally, not all instruments of adjustment are equally flexible. Management views one group of instruments--the compensation structure, the job structure, the internal allocative structure, and many written managerial procedures--as being the subject of separate decision processes. Consequently, they are available for adjustments only under extreme circumstances. However, a second group of instruments consisting of hiring standards, screening procedures, training, recruitment procedures, sub-contracting, job vacancies, and overtime, are more amenable to management discretion. The latter bear the major burden of adjustment. The two groups may be termed the "*more constrained*" and the "*less constrained*" adjustment instruments.

III. The More Constrained Instruments

Each of the highly constrained instruments is the subject of its own decision-making process. These decisions are seen as separate and distinct from decisions concerning the adjustment to external labor market conditions. The elements of that process, for the internal allocative structure and for the internal wage structure have been outlined in Chapters III and IV. The external supply of labor is one of the variables impinging upon these decisions, but only rarely does it determine the outcome of the decision-making process.

1. Compensation

The separation of wage decisions from those involving adjustment to external conditions reflects the constraints surrounding the internal wage structure. Because the wage structure is relatively rigid and tightly bound by the exigencies of internal allocation and by customary law, adjustments in the entry wage tend to exert a leverage upon all wages in the enterprise. This makes such adjustments a relatively expensive means of accommodation to market pressure since the marginal costs of adjustment rise more rapidly than the "supply price" of labor.

In addition, most managers, at least in medium and large enterprises, seem to consider wage changes a relatively ineffective means of accommodating to labor scarcities. They fear that any changes in their own rates will be matched by competitors, possibly generating a community wage spiral without appreciably increasing the labor supply. The upward pressure upon wages in tight labor markets thus appears to come as much form factors such as the changes in the relative costs of strikes to labor and management, increases in prices and profits, and internal pressure to maintain wage parity with other enterprises, as it does from attempts to attract labor _per se_.[1]

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[1] See Albert Rees, "Industrial Conflict and Business Fluctuation," _Journal of Political Economy_, October 1952, pp. 371-82 and Orley Ashenfelter and George E. Johnson, "Bargaining Theory, Trade Unions, and

With these caveats it should be noted that some discretion is permitted within the internal wage structure. While widespread adjustments in compensation are shunned, marginal adjustments are attempted, especially when they could be concealed within the existing compensation structure. Reclassifying entry level jobs by a single job grade, upgrading new hires more rapidly within rate ranges and between job grades, reevaluating job classifications to move them into higher labor grades, and raising guaranteed wage rates for new hires working under incentive programs, were examples of such adjustments found in many of the enterprises studied. Occasionally new job classifications, such as machinist "B" and "C" were created to provide greater wage upgrading opportunities.[1] To stave off a raid by another employer, one company promoted its skilled machinists to "group leaders" at a 20 cents per hour higher wage rate, and sustained this rate until it was ruled improper in arbitration proceedings resulting from grievances to reclassify other jobs.

While wage rates within the enterprise are customarily attached to job classification rather than to individuals, some adjustments in individual rates can also be made in order to recruit or retain particularly valuable employees. "Payment-by-results" plans and merit rate ranges permit some differentiation among workers holding the same job. Individual earnings may also be increased by varying promotion rates slightly.

Industrial Strike Activity," American Economic Review, vol. LIX, no. 1, March 1969, pp.35-49.

[1] See E. Robert Livernash, "An Active Employer Manpower Policy," pp.208-218, in the Proceedings of the 19th Annual Meeting of the Industrial Relations Research Association, 1966.

2. The Job Structure

The process through which the job structure is determined is also distinct from that of adjustment to external conditions. It is dominated by engineers who seldom have direct contact with external market conditions and are only rarely attracted by the problems which such conditions cause. Most engineers appear to favor job simplification and the substitution of capital for labor wherever decision making processes permit them to exercise discretion in these matters. While this implies a general bias toward "labor-saving" or "skill-saving" technologies, a bias conducive to overcoming labor scarcities, the strength of these biases and their influence upon the selection of technology does not seem to vary with external market conditions.

The separation of job structure decisions from the labor adjustment process reflects, like that of wage decisions, the constraints within which it operates. Given the enterprise's location, its product, and investment in existing plant and equipment, major changes in jobs to accommodate changing labor market conditions are, under most circumstances, prohibitively expensive.

A certain amount of minor job revision, however, takes place automatically as the character of the enterprise labor force changes. To this extent the job structure is responsive to market conditions. But the changes are for the most part unplanned and often unnoticed and do not form part of the enterprise's conscious strategy of adjustment.

The capacity for such change is inherent in the nature of the on-the-job training process. The process, as noted earlier, involves a kind of rolling readjustment and reassignment of tasks and duties. A skilled operator or supervisor initially assigns the unskilled tasks to the trainee, performing the skilled tasks himself, taking on the added responsibility of instruction and supervision, and possibly dropping, or at least postponing other duties during the training period. The trainee gradually takes on the more highly skilled tasks, the experienced workman reassumes the simpler job duties and his supervisory responsibilities decline. When training is completed, the previous job structure is reconstituted.

When the external market tightens and less qualified labor is admitted, the "training" may never be completed and the job structure may stabilize with a distribution of tasks appropriate to some phase of training. The fact that on-the-job instruction is individualized also leads to a certain amount of accommodation of jobs to workers. The experienced workman may change the way he demonstrated the job to help the trainee master it. Sometimes this changes equipment and plant layout in small ways as well.[1] The process of adjustment in the job structure of the enterprise is explored more fully in Chapter VI.

3. The Allocative Structure

The process by which the allocative structure of the internal labor market is established does initially take into account external labor market forces, as indicated in Chapter II. The location of entry ports is based upon the expectation that workers with the traits required to fill the entry jobs and related job classifications, will be available on a continuing basis. By filling jobs with high turnover costs from within, the internal labor market also protects itself against costly turnover when external labor markets tighten. While such factors suggest that the internal allocative structure, and the on-the-job training sequences which it represents, might constitute a flexible instrument of adjustment, the value of the internal labor market structure to the labor force and considerations of custom severely constrain managements' freedom to modify the allocative structure at will.

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[1] See Michael J. Piore, "On-the-Job Training and Adjustment to Technological Change," The Journal of Human Resources, vol.III,no.4, Fall 1968, pp.435-449.

New entry ports cannot be opened in other than the lowest skilled jobs without threatening the job security and opportunities for advancement expected by the incumbent labor force. Closing entry ports enhances the value of the internal labor market to the incumbent work force, but such actions tend to be irreversible, and are therefore discouraged. Classic industrial conflicts arise when managements have attempted to fill job vacancies from the external labor market when they had previously been filled internally.

Changes in the shape of mobility clusters also tend to be irreversible. When mobility clusters are made wider or narrower, there tends to be a redistribution of promotion opportunities within the internal labor force. Giving benefits to some workers while taking them away from others within the internal labor market affects employee morale adversely and can also pose political and legal problems for union leadership. Many legal suits with respect to the union's obligation of "fair representation" have involved this issue. Even more important, because movement along mobility clusters takes place in both directions, changes in the allocative structure which are designed to facilitate upgrading during a tight external labor market will later affect the job security of some workers during the contraction phase of the business cycle. Consequently, workers will seek to prevent changes in the internal allocative structure by raising the price which management will have to pay for change. The resistance among some employees to the negotiated merger of layoff districts in the steel plants in 1962 illustrates this point.

Movement within the allocative structure of the internal labor market is also a focus of custom. Patterns of internal labor mobility which are repeated become accepted by the internal labor force as natural and just. For the reasons discussed in Chapter II, this too inhibits flexibility.

This is not to argue, however, that the internal allocative structure is immutable. As in wage and job structures, change can and does occur. When labor requirements in certain areas of the enterprise are expanding rapidly, for example, traditional promotion ladders may be unable to supply the numbers of internally trained workers required. This may require the use of previously untapped sources of skills in other mobility clusters and distribute the productivity effects of the adjustment process more widely in the enterprise.

The changes in promotion patterns can involve increases in both the rate of promotion along traditional ladders and a rearrangement of promotion lines. The relative importance of these two depends upon the previous allocative structure of the internal labor market. Where workers pick up skills required on higher level jobs before they

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[1] See, for example, Whitfield v. United Steelworkers Local 2708, 263 F. 2d 546 (5th Cir.), cert. denied, 360 U.S. 902(1959), and Ford Motor Co. v. Huffman, 345 U.S. 330 (1953).

are actually promoted there is an excess supply of skilled labor along promotion ladders, and the enterprise will be able to accelerate promotion rates readily. When there is no excess supply of workers, linkages may be developed between existing promotion ladders, or new ladders may be designed. In the automobile industry there is the example of the "temporary skilled craftsmen" promoted from the ranks of production workers. In a chemical plant surveyed, bidding rights were extended on an ad hoc basis when the existing bidding area proved insufficient for internal upgrading requirements.

IV. The Less Highly Constrained Instruments

The instruments termed here "less highly constrained"--subcontracting, overtime, job vacancies, recruitment procedures, hiring standards, screening procedures and training--are those which the enterprise normally thinks of as constituting the means of adjustment between internal labor and the external labor market. Decisions affecting these instruments are almost exclusively dominated by this concern. They each constitute a means of obtaining a manpower balance within the internal labor market, and the major factor determining selection among them is their relative costs and effectiveness.

1. Job Vacancies, Sub-Contracting, and Overtime

In some respects, subcontracting, overtime and job vacancies are the least constrained of all the methods of adjustment. Subcontracting and overtime costs are readily estimated, job vacancy costs are not. Job vacancies often mean that work is simply postponed, covered by other employees expending extra effort or working overtime, or performed in a manner which may increase the probability of machine downtime and defective output. Job vacancies are also the residual solution and occur when no adjustment action is taken or when such actions are not successful. The efficiency of subcontracting, as an adjustment device is limited by the likelihood that subcontractors will also be experiencing labor shortages. Overtime is, of course, limited in obvious ways. There are certain cases when these instruments are constrained by union contracts and are less available as means of adjustment.[1]

2. Recruitment Procedures

Recruitment procedures are also relatively unconstrained. The kinds of recruitment adjustments which occur in a tightening labor market were outlined earlier. Recruitment procedures move in a tightening labor market, as one would expect, toward groups previously isolated from job information by geographic, linguistic and cultural barriers. They thus operate to increase the equality of employment opportunity--although the magnitude of this effect is debatable. Presumably as labor markets loosen, some of the recruitment decisions will be reversed.

One aspect of recruitment decisions which the earlier discussion did not mention, but which employers are extremely conscious of, is the role of recruitment procedures as a screening device. Any given type of recruitment procedure tends to produce candidates with certain common attributes. "Word-of-mouth" recruitment tends to provide applicants similar to those already employed; recruitment through civil rights agencies yields blacks, and so forth. Employers often make both recruitment and hiring decisions on this basis. This introduces an element of conservativeness into adjustments in recruitment procedures since the performance qualities of candidate groups attracted by new procedures is unknown.

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[1] See, "How Issues of Subcontracting and Plant Removal are Handled: By the Courts (Robert F. Koretz); By the National Labor Relations Board (William Feldesman); By Arbitrators (Saul Wallen)"; Industrial and Labor Relations Review, January 1966, pp. 239-272.

In a very tight labor market, no recruitment procedures are very effective. It is often necessary to match the recruitment expenditures of labor market competitors in order to avoid more severe scarcities, but this will not overcome the labor shortage. The enterprise is, therefore, forced to place primary reliance upon adjustments in hiring standards, screening procedures and training. Because they bear the major burden of adjustment and because they are constrained in ways which are important for public and private manpower policies, these instruments are discussed in some detail. Although all three adjustments are interrelated, it is convenient to discuss hiring standards and screening procedures together and then to move to a discussion of training.

3. Hiring Standards and Screening Procedures

The content of the entry job vacancies, and the jobs related to them through upgrading sequences, at least in the short run, influence the characteristics that workers must possess to be hired. These characteristics relate to the worker's ability to perform a job, to acquire new skills and abilities, and to adapt to the social environment and behavioral norms of the plant. The employer initially establishes preferred hiring standards based upon these characteristics. Some standards, such as the ability to perceive color, may be absolute prerequisites, but many, especially skill and ability factors, are flexible to the extent that the level of job performance does not fall to zero when they are lowered. Within the limits established by job content and training costs, management can exercise discretion over the kind of workers it is willing to hire. This discretion is often extended further by modifications in training procedures.

While the concept of a hiring standard is clear in theory, it is not readily applied in practice. The only true measure of a worker's effectiveness is job performance, and it is seldom feasible to assess performance prior to employment. Many of the circumstances which promote internal labor markets tend to make the problems of prior assessment especially difficult. Jobs in internal labor markets tend to be enterprise specific so that performance in other establishments is not a reliable predictor. The worker is frequently hired into a line of progression and the employer is more interested in his ability to learn other job skills than in his immediate job performance. Moreover, because internal labor markets arise where turnover is costly, the probability that an employee will eventually quit becomes a significant dimension of hiring standards. . Turnover costs also make it expensive to give applicants a trial period on the job.

For these reasons, hiring standards are seldom applied directly. Instead, managers develop screening procedures to predict work job performance and it is these procedures that determine whether a candidate is hired or not. Common screening devices include educational attainment, personal interviews, work histories, references, criminal records, security checks, and test scores. The cost of these devices varies: the utilization of a worker's level of educational attainment is quite inexpensive, elaborate testing and lengthy personal interviews are more costly.

Screening is almost always a probabalistic process. The variables upon which it is based are chosen because they correlate or, are believed to correlate, with job performance. Occasionally, the correlation is statistically valid but most often it derives from the collective experience and prejudices of the plant management and has never been scientifically verified. In either case the causal relationship between screening variables and job performance is not necessarily well defined. In fact, only in rare cases are managers able to articulate a plausible relationship between job performance and the screening procedures they employed.

Because screening rests upon statistical probabilities, the hiring process is subject to the two types of statistical estimation errors: the Type I error of *rejecting a qualified* candidate and the Type II error of accepting a candidate who is *unqualified*. For any given screening device, there is a trade-off between the two types of errors, and one can be reduced at the expense of an increase in the other. The two types of errors can only be reduced simultaneously by the introduction of more powerful, and generally more costly, screening techniques.

The cost to the firm of accepting a worker who is poorly qualified depends upon the skill content of the entry job, the present and future skill content of the jobs in the related mobility cluster, and the probability of the worker being promoted. Enterprises with a high proportion of low skilled jobs and stable or declining employment are therefore least sensitive to such costs. The cost of rejecting a qualified worker, on the other hand, is measured by the expense of recruiting another worker who is similarly qualified, and who also embodies the criteria expressed in the selection procedures.

In most enterprise markets, the pressure to minimize Type II errors is greater than the pressure to minimize errors of the Type I variety. This is attributable, in part, to the cost of all turnover which tends to accompany internal markets, but limitations upon the employers' freedom to discharge workers also appears to be important. In enterprises organized by trade unions, the right of discharge is limited by the collective agreement. While it is not impossible to fire an incompetent worker, the procedure is frequently time consuming and expensive. Union contracts almost universally allow an initial probationary period during which a new employee is not protected by the agreement and the employer is free to discharge without showing cause. The length of the probationary period varies among enterprises: periods of thirty to ninety days are fairly typical, but some periods run as long as six months. The cost of a Type II error tends to vary with the length of probation.

Non-union enterprises do not face quite the same discharge problem. But many non-union employers place similar restrictons on discharge in order to avoid the kinds of employee grievances which might encourage union organization. In both union and non-union shops, moreover, the cost of discharge is raised by the social community which tends to form at the work place. Once an employee develops friendships within the enterprise, his discharge can undermine the morale of the work force and generate resentment against management.

The costs of type I and type II errors are affected asymetrically by the business cycle. As the market tightens and the enterprise has increasing difficulty attracting candidates, the cost of rejecting workers who actually meet its hiring standards is increased. Because of the pervasive fear of accepting unqualified workers, this tends most often to lead to the introduction of more sophisticated screening devices rather than a simple reduction in the levels of the existing screening criteria.

For example, a high school degree is commonly used as a proxy to measure reliability and ability to learn when external markets are loose, presumably because it is inexpensive and produces a small type II error. The lowering of the educational requirements by one or two years as the market tightens would shift the distribution toward lower type I errors, but at some cost in type II errors. But educational requirements are seldom varied in this way. For example, a machine tool manufacturing firm substituted I.Q. and mechanical aptitude tests when the market tightened in 1965 and dropped the high school requirements which had been its main hiring criteria in the late 1950's and early 1960's. Similarly, an apparel company experiencing rising training costs and higher turnover among new hires, began to screen out slow learners with sophisticated tests involving simulated work tasks.

A good deal of what appears to be a general reduction in hiring standards in a tightening labor market is, in reality, simply a change in screening procedures. But real reductions in hiring standards do occur. Typical changes in the tightening labor market of the mid 1960's involved reductions in educational requirements and acceptable test scores, less stringent work history requirements, and the like. Reductions in hiring standards are generally accompanied by increased training and higher average unit costs generated by rising scrap rates, reduced labor productivity, damaged machinery, additional supervisory burdens, and the like. Often standards are waived on an ad hoc basis according to the difficulties which unfilled jobs pose for meeting production targets.

The reduction of hiring standards in the internal labor market is constrained by the permanence of employment and the promotion rights which it confers. Because employment is permanent, the effects of lowered standards are not reversible: poor employees cannot be replaced by better qualified workers when they become available and the cost impact of poor workers tends to cumulate as they become eligible for promotion to more difficult jobs. Even in the mid sixties, some managers were still preoccupied by the adverse impact upon efficiency of poorly qualified workers hired in the tight markets of the World War II and Korean periods.

The irreversibility of the effects of reduced hiring standards leads many employers to prefer to meet labor shortages through apparently costly, short-term, expedients. Subcontracting is frequently introduced for this purpose. In other cases, employers only accept less qualified workers if they can find some means of circumventing the permanent employment obligation. Temporary help services are one means of doing so. Workers supplied by these services are screened on the job and occasionally are hired permanently. One midwestern machine tool company actually had its own "captive" temporary help service. Another means of avoiding permanent obligations is to discharge employees at the end of the probationary period and hire replacements. Finally, when standards are lowered, some employers attempt to minimize the permanent effects by concentrating on groups with exceptionally high rates of voluntary attrition and whose ambition and capacity for promotion is limited. Thus, some manufacturing firms in the mid 1960's favored hiring married women with working husbands.

Training

A reduction in hiring standards is often accompanied by training procedures designed to reduce its long run impact upon plant productivity. Most employers appear to favor training as a long run remedy to labor scarcities and it is also a prominent means of adjustment to technological change. Recognizing the limitations of out-plant vocational training for enterprise specific skills, they are generally willing to provide the required in-plant training. Some employers are even prepared to train in general skills such as English, shop math, drafting, and typing, if the need is sufficiently great, and if there is reasonable expectation of recapturing the educational investment during a "payoff period" of employment.

In analyzing adjustments through training, it is useful to distinguish three kinds of worker attributes which are, or can be, developed within the enterprise: (1) basic skills, (2) speed and precision in job performance and (3) behavioral traits.

Basic Skills

The layman--and indeed most management personnel--generally associate the term training with basic skills. The term, which is largely self-explanatory, includes such things as verbal and mathematical literacy, blue printing reading, carpentry, machining, core making, and the like. The skill may be narrow or broad; specific to the enterprise or general. Most basic skills can be taught either in a classroom or on the job. As has been noted, however, when skills are provided in the enterprise, on-the-job training predominates.

Speed and Precision

The speed and precision of job performance involve the ways in which a skill, or set of skills, is utilized in a work situation. They are generally developed through practice and repetition on the job once the basic skill has been acquired. Some training of this type is necessary for almost all jobs. In manufacturing plants, the training process is commonly called "learning to make standard." It can be described by a learning curve showing output as a function of length of time on the job. At the point where the learning curve levels off, the worker is said to be trained. Actual learning curves have been measured in only a few enterprises--in airplane manufacturing during World War II, in electronics assembly, and in apparel--usually for purposes of monitoring training. But the concept of learning curve appears to characterize all on-the-job training, even for semi-skilled jobs where the basic skill content is negligible.

Behavioral Traits

The third group of attributes capable of development in the enterprise are behavioral traits such as punctuality, attendance, the ability to accept supervision, and compatibility with fellow workers. These attributes have not traditionally been taught within the enterprise and management is accustomed to treating them as determined by social processes external to the enterprise. In the past, work procedures have been accommodated to a labor force with certain behavioral traits, and candidates not possessing these traits have been excluded. In recent years, however, there has been a certain amount of interest, particularly among the "progressively" managed enterprises, in the possibility of changing behavioral traits of employees. The initial concern has been with leadership and managerial training for supervisory employees and with motivating incumbent employees to be more productive.[1] In the last several years, pressure to combat racial discrimination in employment has expanded the scope of interest to include attitudinal training for both management and workers. Concommitant interest in hiring the "disadvantaged" has produced a concern with the development of the behavioral traits of regular attendance, punctuality and the ability to accept supervisory direction, a lack of which is thought to be the primary barrier to the employment of disadvantaged workers.

The most publicized techniques for the development of such traits are sensitivity training and role playing. These are widely employed for leadership training and to combat racial prejudice, but are also used in programs designed for disadvantaged workers.[1] Such training may be termed formal in the sense that it is analogous to formal classroom instruction in basic skills.

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[1] See McGregor, op. cit., and Paul Pigors and Charles A. Myers, Personnel Administration, 5th ed., pp.5-48 and 127-181.

There is a strong counter-theory, however, that behavioral traits are best developed by managerial insistence upon strict adherence to explicit behavioral standards. Many managers feel that the application of strong, progressive discipline for behavior in violation of these standards is the only effective technique for dealing with the behavioral difficulties caused by disadvantage and racial prejudice. Some maintain that it will also produce the group cohesion and direction sought in leadership training. Techniques of this kind are analogous to training on the job.

On-the-job training for behavioral traits and training in speed and precision (which is always on the job) pose one special managerial problem. Both processes have a potential for permanently lowering the work norms of the enterprise. This potential derives from three characteristics of the customary law which sanctions these norms. One is the basic dependence of the law upon precedent and past practice. The second is the principle of horizontal equity (equal treatment of equals). The third is that when different standards of performance arise in a plant, only the practice most favored by the internal labor force is likely to survive.

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[1] See Peter B. Doeringer (ed.), Programs to Employ the Disadvantaged, Prentice-Hall Co., Inc., Englewood Cliffs, N.J., 1969

Most of the production norms at which training in speed and accuracy are aimed and many of the behavioral norms of the enterprise are resented by the internal labor force. Workers typically would prefer slower work speeds and less stringent quality requirements. In many cases, as individuals they would also like a more tolerant managerial attitude toward lateness and absenteeism. And both workers and managers would prefer to relate to each other in the work situation in the manner most natural to the personalities which they bring to the work place rather than conform to some standards which have been imposed upon them.

When management hires workers who do not conform to traditional behavioral norms or when management tolerates performance which is subnormal as part of the training process, this often signals the incumbent labor force that the norms could be permanently reduced. If, for example, standard output had been traditionally reached after six weeks on the job and new workers cannot make standard after eight, there is a danger that incumbent workers may begin to reduce their output as well. If workers are traditionally fired for unexcused absences and such absences are permitted to special groups of new hires, incumbent workers may also begin to expect such treatment.

The problem is most acute when training in production or behavioral norms is first introduced. In enterprises which have engaged in such training before, there is usually a precedent to distinguish training procedures from concessions in work rules. Thus behavioral training, because it is relatively new, is more of a threat to enterprise performance standards than is training in speed and precision.[1]

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[1] This problem, as it affects the employment of the disadvantaged, is further discussed in Chapter VIII.

There is a variety of ways of minimizing the tendency of training concessions to become permanent norms. When there is a union contract, the negotiation of the program with the union is often sufficient to gain labor force acceptance of its privileged status. Job titles such as "assistant" or "trainee" are sometimes used to distinguish groups facing different norms. Differing wage rates, even if the same titles are utilized, may also suffice in making this distinction. Finally, the trainees can be isolated from the rest of the plant labor force. Vestibule training is sometimes used for this purpose and some companies have even developed separate "feeder" plants, partly to prevent the performance of norms in their regular operations from being corrupted by new hires.[1]

Vestibule training programs also permit closer contact between new hires and supervision. These programs provide an introduction to the work place in an environment where supervisors are more concerned with training and worker adjustment than with meeting production schedules. Moreover, where learning rates and earnings are related under "payment by results" systems, accelerating the training process yields direct economic motivations to the employee.

Training for Labor Scarcities

Most of the training in basic skills which occurs in a tightening labor market is on-the-job and exhibits the characteristics of on-the-job training discussed earlier. There appears, however, to be somewhat greater reliance upon formal training procedures in a tight labor market than in a loose one. This reflects the economies of scale available when formal training programs serve large numbers of workers and the inherent limitations in on-the-job training capacity. In tight labor markets, enterprises also extend skill training into programs of basic mathematical and verbal literacy, blue print reading, and the like which lend themselves to classroom instruction and which are sufficiently general that standard techniques have been developed for classroom use. In loose markets, such skills can usually be obtained externally.

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[1] See Jack Chernick and Georgina Smith, "Employing the Disadvantaged," in Peter B Doeringer(ed.), Programs to Employ the Disadvantaged, op.cit., pp. 14-22.

Much of what is called formal training in the enterprises surveyed, however, proved to be no more than formalized on-the-job training, which did not change the basic character of the training process. Formalizing the training creates a greater managerial awareness that such training is occuring and of the costs which it imposes. One way in which on-the-job training is formalized is by adopting a systematic process of exposing the trainee to the variety of skills he is likely to need when working on his own. In one plant, for example, trainees learning machine repair were rotated through various production departments. In another enterprise, one with a plant-wide maintenance department, the maintenance foreman assigned trainees according to a formal training schedule listing the sequence of operations to which the trainee was to be exposed.

Another type of formal training, quite common in tightening labor markets, is vestibule training. As noted, this is sometimes no more than a means of isolating the work norms applied to the trainees, but it is often also introduced to reduce the cost or increase the effectiveness of the skill training process. Vestibule training ranges from orientation to work rules to classroom instruction in general skills, to simulations of the work environment. Several electronics programs taught the fundamentals of soldering, spot welding, or cable making; a ship-building company established a vestibule welding program; and two apparel companies taught machine sewing in a separate training area.

Vestibule training is not a panacea for limited on-the-job training capacity. Vestibule programs which are substitutes for on-the-job training require supervisory skills, equipment, and raw materials from the plant floor which are likely to be in scarce supply.[1] Moreover, it is difficult to reproduce the breadth of work experience encountered on the job. Nevertheless, there are indications that vestibule programs can be substituted for on-the-job training when the numbers of trainees are large and the job content relatively standardized.

In one apparel plant, for example, line supervision provided the instruction, and actual production tasks were performed in the vestibule program. Initially trainees learned to operate their machines by sewing on paper and scrap material. Then the jobs for which they were being trained were divided into simple steps, much like the process of work simplification. Production speed and quality was then developed for these simple tasks. Gradually, the tasks were assembled into more complex jobs until the trainee was performing a complete job at full production speed. Trained workers were then transferred to the plant floor along with their training machines.

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[1] Data collected by Charles R Walker et al., [The Foreman on the Assembly Line(Cambridge, Mass: Harvard University Press, 1956),p.84], suggest that during loose labor markets foremen spend almost 5 per cent of their time on training-related activities in the automobile industry.

Formal training programs can also be used to prepare workers for upgrading. In steel, machine tool, and screw machine plants, for example, formal apprenticeship programs have been expanded or reactivated in order to accelerate the development of skilled journeymen or line foremen. More immediate skill needs were sometimes met through special trainee programs which combined on-the-job training with formal classroom instruction. These programs resemble apprenticeship training since they explicitly pair trainees with skilled mechanics in the training process.

When enterprises rely upon classroom training, it is often designed to facilitate learning on the job and, by itself, is of little value. One good example is a program in an electronics plant operated by an equipment vendor for his customer's personnel. Although primarily designed to overcome a shortage created by a change in technology, it is typical of the type of formal classroom program introduced in a tightening labor market. The program consisted of a two week course in higher mathematics, electronic theory, and equipment maintenance. The material was oriented toward the vendor's equipment, but a good part of it was at college, or even graduate school, level. The vendor recognized that much of the material was above his students, but he expected them to emerge from the course with enough vocabulary to describe equipment difficulties to his employees and receive verbal repair instructions over the phone. Much of the material which the students did not understand initially would become clear on the job.

Vendor designed programs involve certain problems not likely to arise when the enterprise initiates its own training programs. The vendor, for example, is compelled to accept the students which his customer assigns to the program. With no control over the prior preparation of the trainees, it is difficult to adjust the training curriculum accordingly. The basic features of the program, however--a sophisticated curriculum taught in a brief period and designed to supply a framework for further training on the job--are common to in-plant classrooms as well.

Occasionally employers turn to out-plant training institutions such as vocational schools for skill development. Usually they were less interested in the basic or general vocational education than with instruction specific to their enterprise skill requirements. Respondents from a number of plants mentioned programs conducted through their school systems which were designed to meet their particular skill requirements. In one case involving basic training for literacy, the program was clearly a short run response to an immediate labor shortage. Most other programs were more permanent, instituted to create a small but regularly available supply of graduates possessing the required skills.

These programs took a variety of forms. Two of them, designed to supply craftsmen skilled in electronic maintenance, were revisions of the high school vocational program and supplanted a training program previously conducted in the plant. In several other cases, programs were developed in local community colleges to train technicians in the plant's somewhat specialized technology.

It is characteristic of all these programs that they were initiated by the enterprise, rather than the school systems, and were so dependent on it that they appeared to be an extension of its internal training activities. As indicated above, these connections generally grew stronger and more frequent as labor scarcities became more acute. Occasionally the enterprise supplied the specialized equipment required, as well as the necessary teachers, and it often developed the curriculum.

In general, there was much less formal classroom training than one might expect. It appeared to be the preferred training technique only for the orientation of large groups of new employees to enterprise rules and procedures. Instruction in specific jobs, even in periods of rapidly expanding employment, was given on the job whenever possible--and the companies studied went to great lengths to insure that it was possible. Moreover, in contrast to on-the-job training, formal classroom training costs appear as budget items and are likely to become the target of cost reduction acitivites once the training crisis is past.

While the visibility of costs may affect the form of a training program, costs were never an explicit factor in deciding whether the training was to be undertaken, or where it was to be conducted. This might be explained by the costs being minimal. A more likely explanation, however, is that the adjustment costs are manifested in subtle ways that escape detection until they cause a discontinuity in the production process. In most cases, enterprise programs were developed in direct response to shortages which interfered with production goals. Cost seemed to matter little in comparison to the concern with production bottlenecks.

Internal training, however, cannot always be relied upon to overcome production bottlenecks. Especially where training occurs on the job in the process of production, training can interfere with production. During periods of rapid employment expansion, on-the-job training facilities may become limited and inventories of pre-trained workers, exhausted. Because on-the-job training requires the same supervisory inputs, materials, and equipment as production, large-scale training can lead to serious drains on productive capacity. Although estimates varied, most of the employers surveyed were convinced that there were limits to the rate at which new employees could be absorbed.

Summary

It has been argued in this chapter that the enterprise internal labor market operates through a series of adjustment instruments to reconcile imbalances between the supply of labor on the external market and the labor requirements of the internal market.

There are two types of adjustment instruments available to the enterprise internal labor market, those that are highly constrained and those over which management can exercise considerable discretion. The highly constrained instruments are often the focus of custom at the work place and are part of decision processes largely unrelated to the resolution of labor market imbalances. These instruments are: the compensation structure, the job structure, the internal allocative structure, and written managerial procedures. The less constrained instruments--hiring standards, screening procedures, training, recruitment procedures, sub-contracting, job vacancies, and overtime--are the principle instruments of labor force adjustment. Selection among these instruments approximates their relative costs and benefits.

This view suggests that there are limits to the rate and volume of labor force adaptations which the internal labor market can provide, and emphasizes the costs of the adjustment process. It also indicates that sufficiently powerful adjustment instruments are available to most internal labor markets to permit them to achieve a viable balance with the external labor market. The process of technological change and adjustments in job content have been largely ignored in this discussion, however, and will be considered in the next chapter.

Appendix

Quantitative Measures of the Internal Adjustment Process

In Chapter V the process of labor market adjustment has been examined. It was argued that the particular adjustment strategy adopted by an enterprise would reflect both the flexibility of the various instruments and the relative costs and benefits. It is, however, by no means easy to estimate adjustment costs in any precise fashion or to allocate them to specific labor instruments.

The costs of variations in hiring standards are perhaps the most difficult to estimate. Reduced hiring standards are reflected in lower labor productivity, equipment downtime, repair costs, higher costs of supervision, and so forth. The costs, in other words, are indirect and spread over a number of variables. Estimation is further complicated by other factors that impinge upon these variables, making it difficult to identify the independent effect of hiring standards. Experiments that might make it possible to separate the influence of hiring standards are inhibited by the rules and customs restricting management's freedom to assign or to discharge workers once they have entered the enterprise and passed probation. Hiring standards will thus affect the costs not only of the job for which the worker is hired, but also the costs of other jobs to which he may later be promoted. While it is not impossible to estimate these costs, it is exceedingly difficult to do so.

Any attempt to estimate the cost of training encounters similar problems. Only where training takes place in formal classroom programs can its costs be readily identified. Much training, however, takes place on the job, and its costs, like those of reduced hiring standards, are reflected only indirectly in higher unit production costs. Indeed, in many respects the period of on-the-job training is much like a temporary reduction in hiring standards.

Among the instruments of adjustment, only compensation and recruitment costs are readily measurable because they appear explicitly in operating budgets. Even where some adjustment costs are identifiable, the mix of instruments varies considerably among enterprises making it difficult to develop an index of cyclical changes in adjustment costs at either the enterprise or industry levels[1]

In this Appendix some quantitative materials pertaining to the costs of the internal adjustment process are presented.

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[1] Caution must be exercised in interpreting individual measures. Often such measures do not move consistently over time and there is a tendency for the more significant or visible elements costs to be reduced through cost cutting efforts.

Table 1

Estimates of Hiring and Training Costs

		Average Hiring Costs	Average Training Costs	Average Hiring and Training Costs
All Occupations	(1)	$ 65.00[a]	$ 74.00[b]	
	(1)	118.00[c]	71.00[d]	
	(1)	145.00	79.00[d]	
	(2)	n.a.	369.00[e]	
	(3)	n.a.	n.a.	$200.00[g]
	(4)	22.66		208.20[f]
	(5)	43.27		245.69[h]
Professional, Managerial and Technical	(1)	168.00[a]	119.00[b]	
	(1)	837.00[c]	268.00[d]	
	(1)	907.00[c]	116.00[d]	
	(6)	990.00[g]	n.a.	
Skilled Labor	(6)	149.00[g]	n.a.	
Unskilled Labor	(6)	117.00[g]	n.a.	
Secretary	(6)	172.00[g]	n.a.	
Clerk	(6)	145.00[g]	n.a.	
Other Occupations	(1)	36.00[a]	66.00[b]	
	(1)	55.00[c]	59.00[d]	
	(1)	49.00[c]	43.00[d]	

Sources:

(1) John G. Meyers, "Hiring Costs: Some Survey Findings," *The Conference Board Record*, January 1967, p. 34. Data is for June, 1965, November 1965, and February 1966.

(2) Edwin F. Estle, "The Extent of Private Industrial Training in New England," *New England Business Review*, February 1964.

(3) Charles C. Holt et. al., Planning Production, Inventories, and Work Force, cited in (1). (1960). 1965 prices.

(4) Walter Y. Oi, "Labor as a Quasi-Fixed Factor," Journal of Political Economy, December 1962, cited in (1). 1965 prices.

(5) Merchants and Manufacturers Association (of Los Angeles), *Labor Turnover: Causes, Costs, and Methods of Control* (1959) cited in (1). 1965 prices.

(6) Bureau of National Affairs, Survey No. 86 "Recruiting Practices," *Personnel Policies Forum*, March 1969.

Notes:

a. Average of 16 employers

b. Average of 15 employers

c. Average of 14 employers

d. Average of 13 employers

e. Average of 210 employers

f. Single employer data

g. Sample size unknown

h. Average of 24 employers.

Recruiting and Hiring Costs

None of the enterprises surveyed estimated their hiring costs or changes in these hiring costs beyond the gross information contained in personnel department budgets. Several studies of hiring costs have been made and the resulting estimates are shown in Table 1.

On-the-Job Training

On-the-job training, it has been argued, is one of the more significant instruments of manpower adjustment. Conceptually, this suggests that individual learning curves would provide a basis for measuring the adjustment process within enterprises. Calculating the difference between actual efficiency and 100 per cent efficiency of individual workers, and then summing these differences across all workers in the enterprise would provide an estimate of the costs of informal training.

A simple model approximating this process would assume the general form:[1]

$$OMH - f(A, U, T)$$

where

OMH = Output per man-hour
A = Accession or new hire rate
U = Utilization rate of plant and equipment
T = State of technology

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[1] Such a model is related to recent attempts to explain short-run changes in factor productivity and short-run behavior of production functions. The major difference is that the effect of new hires and promotions upon labor productivity, through on-the-job training, is explicitly incorporated into the model. See James S Duesenberry, et al., The Brookings Quarterly Econometric Model of the United States, (Chicago: Rand McNally Co., 1965), and Lester C Thurow and L.D Taylor, "The Interaction between the Actual and the Potential Rates of Growth," Review of Economics and Statistics, vol. XLVIII, no.4, November 1966, pp.351-360.

Unfortunately, few enterprises develop the data on individual worker productivity needed for testing such a model.[1] Several proxy measures were collected during this study, however, which illustrate some of the effects of labor force adjustment upon production efficiency. In piece-rate industries, such as apparel, for example, many establishments collect data on "make-up" payments, wages paid to individual workers equal to the differential between their hourly piece-rate earnings and the minimum wage or guaranteed rate on the job. For each employee, "make-up" declines over time according to his learning curve. In Equation (1), monthly data on the make-up rate in one men's apparel plant studied is regressed on monthly hiring rates for the period.

Equation

(1) $M_t = 2.3189 + .5360H_t$ $R^2 = .1686$ d.f. - 16

where M_t = make-up for learners as a per cent of total wage bill in time t.

H_t = hiring rate per 100 employees in time t.

This equation indicated an increase of one per cent in the monthly hiring rate and is associated with about a one-half per cent increase in make-up costs. Evaluated at the means, on-the-job training of new hires accounted for 16 per cent of the monthly make-up rate.[2]

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[1] See John W Kendrick and Daniel Creamer, Measuring Company Productivity, (New York: National Industrial Conference Board, 1961).

[2] Given the data available, Equation 2 produced the best "fit". Experimentation with various lab structures for hiring rates did not improve the statistical results. Substituting net changes in employment for hiring rates as a test, the sensitivity of training costs to very short term turnover produced the anticipated reduction in the explanatory power of the model.

A variant of the general model shown in Equation (2) was applied to a quarterly data available for the steel industry.

$$(2)\quad \frac{OMH_t}{OMH_{t-1}} = a - b_1H_t + b_2 \frac{X_t}{X_{t-1}} + b_3C_t + u_t$$

Where,

OMH_t = Index of output per man-hour in time t
H_t = Hiring rate per 100 employees in time t
X_t = Index of output in time t
C_t = Capacity utilization rate in time t

During the period 1958 (I) to 1967 (II), the following results were obtained.[1]

$$\frac{OMH_t}{OMH_{t-1}} = .46 - \underset{(3.1896)}{.035H_t^{***}} + \underset{(17.8744)}{.52}\ \frac{X_t}{X_{t-1}}^{***} + \underset{(1.5616)}{.0005\ C_t} \quad R^2 = .9188 \ d.f.=33$$

The same equation in logarithmic form provided a somewhat improved fit, although the significance of the training proxy H_t fell substantially as can be seen below.[2]

$$L_n \frac{OMH_t}{OMH_{t-1}} = .11 - \underset{(1.9834)}{.015}\ L_n H_t^{*} + \underset{(20.0944)}{.56}\ L_n \frac{X_t}{X_{t-1}}^{***} - .024\ L_n C_t$$

$$\bar{R}^2 = .9520$$
$$d.f. = 33$$

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[1] t values are shown in parentheses.
* = significant at the .1 level
** = significant at the .05 level
*** = significant at the .01 level

[2] When the capacity utilization variable was dropped from both equations $\bar{R}^2$'s were virtually unchanged and the hiring rate variable became significant at the .01 level. Other functional forms of the equation were tested, but the $\bar{R}^2$'s were inferior, although always above .9. The hiring rate variable was significant at the .10 per cent level or better in most cases.

Additional quantitative evidence of the labor force adjustment process comes from the literature on "learning by doing." Studies in the air frame industry, ship building, iron making and electronics all suggest that repeated performance of similar job reduces unit labor costs.[1] A number of studies have attempted to relate changes in output per man-hour to variables such as time, the length of production runs, and the number of production cycles.[2] In general, these studies have found a secular decline in unit man-hour requirements as production tasks are repeated and have concluded that factors other than technological change affect short term production costs and must be incorporated into dynamic production functions. These factors include "learning by doing," improvements in technical knowledge, changes in utilization rates, and minor innovations.

The type and quality of the data available in the examples presented above do not permit precise testing of the thesis that adjustments to labor market imbalances are readily accomplished within internal labor markets. Nor do they provide statistically reliable measures of the magnitude of various adjustment costs when they are incurred. Nevertheless, they present evidence which is consistent with the operation of the internal labor market as described in this Chapter.

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[1] One study of an iron manufacturer in Sweden, for example, indicated that a continual increase in output per man-hour ocurred over a 15-year period despite the fact that the product mix and the production process remained relatively stable. A long-run learning curve was postulated as the explanation for this phenomenon, although such "learning by doing " should be defined to include informal innovations in work methods. More recently a study in the electronics industry poltted on-the-job learning curves for assemblers. See Arrow, op. cit.

[2] See, for example, Armen S . Alchian, "Reliability of Progress Curves in Airframe Production," Econometrica, vol. XXXI (October 1963), pp.679-693; Werner Z Hirsh, "Manufacturing Progress Functions," Review of Economics and Statistics, vol. XXXIV,(May 1952), pp.143-155.

CHAPTER VI

TECHNOLOGICAL CHANGE AND ADJUSTMENTS IN JOB CONTENT

The recent decline in unemployment under strong government stimulus to aggregate demand has allayed the fears of structural unemployment prevalent in the late 1950's and early 1960's. Nonetheless, these fears --particularly as they were related to technological change and automation--retain a certain plausibility. In theory, structural imbalances in labor market should be forestalled by variations in relative wages and the adjustments in the composition of labor demand and supply which the wage variations induce. Innovations in technology, however, are not subject to this discipline; and it is perfectly consistent with the conventional theory for innovations to generate a set of jobs which the labor force is incapable of manning.

In the preceding chapter, it was shown that processes of labor force adjustment occur within the internal labor market through instruments operating primarily upon the characteristics of the labor supply. In this chapter, the relationship between the labor market and the job content of the enterprise will be examined. In the concluding section, the implications of this relationship for aggregate labor market policies will be appraised.

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[1] The greater part of this chapter first appeared in Michael J Piore, "The Impact of the Labor Market on the Design and Selection of Productive Techniques Within the Manufacturing Plant," Quarterly Journal of Economics, vol. LXXXII., no. 4, November 1968, pp. 602-620.

I. The Determination of Job Content

The process of job generation within an enterprise may be divided into three stages: (1) the search for areas in which changes in productive technique might be introduced, (2) the design and construction of the capital equipment, and (3) the design of jobs required to man the equipment. The stages roughly correspond to the divisions in time and in the distribution of responsibility within the enterprise. Any part of the process of technological change may be performed within the enterprise or purchased from outside institutions, but although a wide variety of combinations of internal and external participation was encountered in the study, two patterns appear to predominate: that in which the whole process took place within the enterprise and that in which standard equipment was purchased from a vendor. The character of the process can be presented most easily by developing the wholly internal pattern, characteristic of large, multiplant enterprises, as the basic model and then introducing outside participation as a variation upon the internal pattern.

1. The Search

In large enterprises the responsibility for selecting points in the productive process where innovations might be introduced rested with line management and with the engineers assigned to the operating departments.[1] Once a point had been selected, the innovation was frequently designed and constructed by corporate engineers. But, in the search, the latter served primarily as consultants to the operating personnel.

The key role of the operating personnel in search activity may be attributed to the nature of technology. A good part of the technology of work exists only as an operating process. It is not formally described and its scientific rationale is imperfectly understood. Manufacturing technologies are frequently developed experimentally, through trial and error. Apparently some design problems are in advance of theoretical understanding.[1] Others are either too specialized or too trivial to command theoretical interest, or can be solved more expediently through trial and error.[2] Even equipment initially built to formal specifications is subject to a variety of modifications once in operation, many of which are thought too minor to be formally recorded. Over time the minor changes accumulate and the equipment moves a considerable distance from the recorded design.

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[1] A number of minor innovations are suggested, and frequently designed and introduced, as well, by production and maintenance personnel. Together innovations by production and maintenance workers may account for a significant portion of productivity increases. But in the enterprises visited for this study they were frequently designed to increase yields under incentive plans or short-cut standard repair procedures; they were, therefore, hidden from management and not reported in the interviews. Cf. Stanley B. Mathewson, Restrictions of Output Among Unorganized Workers (New York: Viking Press, 1931), pp. 110-14; Frederick G. Lesieur (ed.), The Scanlon Plan (Cambridge, Mass.: The Technology Press of the Massachusetts Institute of Technology, 1958); and Sumner H. Slichter, James J. Healy, and E. Robert Livernash, The Impact of Collective Bargaining on Management (Washington: The Brookings Institution, 1960), pp 355-61.

Because so much of the existing technology is not formally described, attempts to improve it typically begin with a study of the process in operation. This appeared to be true of both chemical and mechanical processes. One chemical engineer commented: "I spent two weeks in the plant trying to separate the essentials of the process from the witchcraft. I know I didn't completely succeed, but I was afraid to go further. And they told me that process was automated!" In another plant a proposal to move a complex piece of mechanical packaging equipment two feet across the plant floor was rejected for fear that, once disrupted, it could not be got to operate again at maximum speed.

The necessity of studying the operating process makes line managers uniquely suited to conduct the search, for they are already sufficiently familiar with the process to evaluate its potential for improvement. Insofar as the search is conducted by these operating personnel, it appears to be directed by variables which are largely independent of labor market forces. Many innovations are designed to overcome specific operating problems: an equipment breakdown, a deterioration in the quality of the product, changes in the quality of raw material inputs, labor relations difficulties, and the like. Problems of this kind are subject to a number of random influences, but they seem to cluster around both very old and very new equipment. Old equipment breaks down frequently, while new equipment often has mechanical difficulties, until the "bugs" are worked out. New equipment tends also to disrupt processes which are physically related to it. In the plants studied, this last effect was a particularly important stimulus to technological change. A number of innovations were designed specifically to improve the speed and accuracy of processes which fed material into new machines or received output from them.[1]

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[1] The classic example of this phenomenon is the development of coking for coal in eighteenth century iron manufacture. See Thomas S. Ashton, Iron and Steel in the Industrial Revolution (Manchester, England: Manchester University, 1924), pp. 24-59.

[2] Cf. Abbott Payson Usher, A History of Mechanical Inventions (New York: Mcgraw-Hill, 1929), pp. 8-31, and Irving H. Siegal, "Scientific Discovery and the Rate of Invention," in National Bureau of Economic Research, The Rate and Direction of Inventive Activity: Economic and Social Factors (Princeton: Princeton University Press, 1962), pp. 441-50.

In addition to solving operating difficulties, the engineers assigned to operating departments were expected to originate cost saving ideas. The pressure todo so was reinforced by systems of cost control in all of the enterprises studied. These systems divided total production costs into a series of components. Each component was then compared with a cost standard or "bogey," which incorporated a cost reduction target. Higher management regularly investigated costs in excess of standard.

Cost control systems vary widely among enterprises making generalization hazardous. Nevertheless, it appears that cost targets are not greatly influenced by labor market forces. In two plants studied, for example, the cost targets were clearly established after the search had taken place; they incorporated innovations which the engineers had already planned to introduce. In other plants a similar effect was produced by negotiating cost standards with the departmental engineers. As a rule, moreover, cost breakdowns were too broad to provide an effective guide for search activity: labor costs were typically divided into direct and indirect labor, and individual labor grades were never separately identified. In all plants, price and wage increases were generally an accepted explanation for costs in excess of standards. The engineers maintained that the cost control procedures generate a generalized pressure for cost reduction, but have little influence upon the kinds of innovations which are made.

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[1] Kuznets notes this effect in explaining the rate of technological advance within an industry. "Technically, a branch of production is a series of separate operations that lead to an invariable sequence from the raw material to the finished product. Once an important process in this chain is revolutionized by an invention, pressure is exerted upon other links of the chain to become more efficient. Any disparity in performance at the different stages precludes full exploitation of the innovation made." Simon Kuznets, Economic Change (New York: W.W. Norton, 1953), p.267.

Innovations can also be stimulated informally in two other ways. First, while moving around the plant on other business, the engineers can simply spot points in the productive process where innovation seems possible. Innovations originating in this way are also governed by the distribution of operating difficulties, for it is in areas experiencing such difficulties that engineers are most likely to spend enough time observing the productive process to guage its potentialities for improvement.

Second, the impetus for cost saving ideas can come from technologies operating elsewhere in the economy. These are reported in trade magazines and catalogues of equipment vendors, or viewed at trade fairs and in other plants or departments where the engineers visit or work. Both the engineers and their companies typically make a deliberate effort to broaden contact with other technologies. This is often cited as one of the reasons for frequent managerial rotation. Some large companies also organized inter-plant tours for departmental foremen or engineers, and in certain industries, such as automobiles, interfirm visits are common.[1]

2. Labor Market Influences Upon the Design and Construction of Equipment

Minor modifications in technique are frequently designed and constructed on the plant floor by the foremen or the departmental engineers. But for major projects, requiring considerable engineering time or involving large expenditures, design procedures are more formal. Projects are typically reviewed by one or more of the three corporate engineering departments

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[1] James R. Bright, Automation and Management (Boston: Harvard Business School, Division of Research, 1958), p. 91.

(product, process, and industrial engineering), and the approval of higher management is required before construction can begin. Frequently, the innovation is actually designed and constructed by corporate engineers. In obtaining managerial approval and in resolving disagreements among the engineers, formal cost analysis is critical. Consequently, not only the final design, but various design alternatives are costed out.[1]

The labor market might conceivably influence any of the components of the cost estimate: (1) the operating wage bill, (2) output per unit of operating time, (3) materials consumption and wastage, (4) maintenance and repair costs. None of these components, however, is very sensitive to variations in labor market conditions. Moreover, they appear to be particularly unresponsive to changes in the relative scarcities of various types of labor.

In all of the plants studied, the operating wage bill was estimated by multiplying the number of production workers by a single standard wage rate. The standard rate was a convention used throughout the engineering departments of the plant or corporation, and many of the engineers had no idea where it came from or how it was derived. Its source could be traced in only one plant. There, the rate had been developed by the personnel department. It represented the average hourly wage and fringe costs for production and maintenance workers in the plant, corrected to include that portion of the costs of hiring, training and labor turnover which were reflected in the budget of the personnel department. The figure was revised after each negotiated wage increase, but no allowance was made for interim wage variations due to changes in the composition of theplant labor force, the amount of overtime worked and the like.

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[1] For a detailed discussion of administrative procedures for investment decisions, see Bright, op. cit., pp. 88-106; and Walter W.Heller, "The Anatomy of Investment Decisions," Harvard Business Review, Vol. XXIX, No. 2 (March 1951), pp. 95-103.

Nor was an attempt made to anticipate future wage increases.[1]

Output per unit of operating time and materials consumption, insofar as these depended upon the labor force, were estimated by the industrial engineers on the basis of standard time and motion data. Learning periods, when included at all, were derived from standard learning curves for similar jobs. Productivity estimates were based, therefore, upon the productivity of an "ideal worker." There was no evidence that the estimates were altered to take into account the particular hiring standards prevailing at the time or likely to prevail in the future. This procedure persisted despite the fact that plant foremen invariably reported that the engineering standards tended to overestimate the capabilities of the average production worker.

Variations in labor market conditions might also influence the cost of maintenance and repair. These costs, however, were regularly estimated only for large projects, and even there they were frequently introduced only as an allowance for machine downtime. Downtime estimates were based upon the time required for a skilled craftsman familiar with the equipment to repair it. They were not corrected for the delays occasioned by the shortage of craftsmen which many plants were experiencing at the time of the interviews. In none of the plants was it standard procedure to estimate the wages of repair craftsmen. When included, craft wages were valued at the same standard rate used in costing operating labor.

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[1] While the source of the standard wage rate was impossible to trace in other plants, it appeared to be derived in a similar manner. For example, the engineers reported that changes in the standard seemed to coincide with negotiated wage changes; they assumed that the standard did not anticipate future wage increases. Neither the engineers nor the personnel department had complete estimates of hiring and training costs in any of the plants, so it is unlikely that the standard reflected these costs except as they appeared in the personnel department's budget. The standard rates were in excess of the average wage of production workers in the plants, hence either maintenance wages or fringe benefits or both must have been included in the average.

Taken as a whole, the costing procedures -- in the failure to allow for future wage increases, in the utilization of "ideal" productivity standards, and in the incomplete allowance for maintenance costs -- appeared to underestimate the actual cost of labor. The estimates certainly did not reflect variations in labor costs produced by changing market conditions, except as these variations were reflected in the average plant wage rate at the time of negotiated wage changes.

The errors in estimated labor cost may have been corrected by a bias against labor-intensive techniques. Virtually without exception, the engineers distrusted hourly labor and admitted a tendency to substitute capital whenever they had discretion to do so. As one engineer explained, "If the cost comparison favored labor but we were close, I would mechanize anyway." The engineers, however, justified this bias by reference to the work ethic of hourly labor and the human failings of variability and error.[1] It did not represent a deliberate attempt to correct for inaccuracies in the standards upon which labor costs were estimated.[2] As noted earlier few of the engineers knew how these standards were developed.

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[1] See Thorstein Veblen's distinction between the industrial and pecuniary employment (or aptitude) and among those in industrial employment between the attitudes of workmen and engineers in The Theory of the Leisure Class (New York: B.W. Huebusch, 1912), pp. 229-34; and The Engineers and the Price System (New York: B.W. Heubsch, 1921), pp. 52-82. Also see Perlman's discussion of the economic philosophies of manual laborers and businessmen in Selig Perlman, A Theory of the Labor Movement (New York: Augustus M. Kelly, 1949), pp. 237-45.

The qualities which the engineers distrust become more prevalent in the plant in a tightening labor market as hiring standards are reduced and discipline is relaxed. The bias may therefore be responsive to variations in market conditions.

[2] It is not clear, moreover, that the costing procedures lead, on balance, to more labor-intensive methods of production than are justified by actual labor costs. If maintenance requirements are related to capital intensity and if errors in the estimated cost of maintenance labor are sufficiently large relative to errors in the estimated cost of operating labor, the costing procedures will favor capital-intensive methods of production.

Perhaps the most startling aspect of the costing procedures was the practice of estimating labor cost on the basis of a single standard wage rate.[1] The failure of the engineers to estimate the precise wage rates on individual jobs implies that they neglect possibilities of substitution among labor grades. Most of the engineers accepted this inference. They claimed that the savings to be gained from alternative manning arrangements were too small relative to the rates of return required for project approval to affect the fate of the project.[2] Their time, they felt, was better spent on other aspects of the design.

This explanation is not entirely satisfactory. Economists have generally attributed the high internal rates of return on enterprise investments either to the risks associated with innovation or to a corporate aversion to outside financing which necessitates a strict rationing of internal funds.[3] Both interpretations of the required rates of return imply that the neglect of alternative manning arrangements indicates costs to the firm as well as to the engineer. A more plausible explanation for the inattention to possibilities of substitution -- one that was in fact provided in one of the interviews -- is that precise predictions of manning patterns are too expensive and too uncertain to justify the effort which they would require. Several factors suggest that this is the case.

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[1] In half of the plants studied the standard wage was used throughout the design process. In the remaining plants jobs were sometimes individually costed as the project was readied for final review. But this procedure was not standard and, even when followed, the individual rates did not play a part in the actual design process.

[2] All of the firms in the sample used a payout period approach to evaluate investment proposals. The required payout period varied with the nature of the project, but fell usually between two and three years, implying an annual rate of return upon invested capital of 30 to 50 per cent. Because the payout period neglects returns in later years, the effective rate on some of the projects may have been considerably greater. See Joel Dean, Capital Budgeting (New York Columbia University Press, 1951), pp. 26-27. These rates are generally in line with those reported in the 1963 McGraw-Hill Survey McGraw-Hill Publishing Co., Sixteenth Annual Survey of Plans for New Plant and Equipment (New York·McGraw Hill, 1963), Table XII.

[3] See, for example, Dean, op.cit., pp.26-27; James S. Duesenberry, Business Cycles and Economic Growth (New York: McGraw-Hill, 1958), pp.49-112; Heller, op.cit., p. 101.

Until new equipment is actually on the plant floor, the jobs it will create are extremely difficult to foresee. The equipment itself merely defines a set of tasks which must be performed. The way in which these tasks are ultimately combined into jobs will depend upon the physical proximity of the equipment to other work performed in the plant.[1] Even when location is known in advance, the number of tasks which an individual employee can successfully manage is not always apparent. In many cases, manning is set experimentally once the equipment is in operation.

The problem of estimating precise labor costs is further compounded by the difficulty of estimating wage rates for newly created jobs. Individual wage rates are set through elaborate job evaluation and time study procedures which involve detailed observation of the job as it is performed on the plant floor. This is not possible until equipment has been constructed and installed. Moreover, in organized plants, rates for new jobs -- and often the job designs as well -- are subject to union review and, possibly, artibration.[2] Rate concessions are often required to smooth the process of transition to new technology, and their character will depend on the nature of the management-employee relations prevailing at the time the technology is introduced. Finally, minimum job qualifications can only be guessed at when a new technology is first introduced, since only overqualified engineers have had any experience operating and maintaining it.

The barriers to consideration of alternative manning inherent in the process of job design and job pricing are compounded by the nature of the equipment design process. The industrial engineer cannot man a piece of equipment until it is designed. Similarly, the manufacturing engineer cannot design equipment until the product design is complete.

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[1] See Louis E. Davis and Ralph R. Canter, "Job Design," The Journal of Industrial Engineering, VI (Jan. 1955), p.3.

[2] See, for example, Pike and Fisher, Inc., Steelworkers Handbook of Arbitration Decisions (Pittsburgh: United Steelworkers, 1960), pp. 63-83, 200-207.

While there is a certain amount of collaboration among the engineers, and the industrial engineer can frequently suggest changes in the product or in the process which facilitate his own task, the design must eventually be frozen if the project is to be completed. Since the freezing begins with the product design and progresses to the equipment, it is the industrial engineer who is invariably left with the least degree of freedom.

The influence of labor market forces upon the innovation process are limited to two types. First there are average labor costs, and forecasts of these costs, which are incorporated into capital accounting procedures. The larger these costs bulk in total production costs the more likely is the adoption of labor saving technological change.

To say that average labor costs affect the rate of technological change, however, does not indicate that innovation is sensitive to relative scarcities of labor. Accounting procedures using average wage costs provide a very imperfect vehicle for transmitting relative labor costs into equipment design.

3. Job Design Given Capital Equipment

As has been noted, jobs cannot be fully designed until the equipment is operating on the plant floor. Hence, any manning specifications which accompany the equipment design are typically adjusted once the equipment has been installed.[1] In theory, at least, further job changes might be made during the later life of the equipment in response to varying market conditions.

Technically there is at this stage a certain latitude in job design. While the basic tasks are defined by the product and the equipment, they can be combined into a variety of kinds of jobs. For example, a machine operator may be required to pick up his materials and deliver his output, or the tasks of pick-up and delivery may be separate jobs assigned to other workers. The technical elasticity of job design is augmented when equipment can be rearranged on the plant floor.

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[1] These adjustments are made by the industrial engineer, working in cooperation with the line supervision, and are frequently subject to union review.

It is extremely difficult to determine what actually governs the process of job design. Almost without exception, industrial engineers speak as if it were a purely mechanical process that involved minimization of the number of jobs in the plant without reference to the relative costs of different types of labor or the availability of required skills. Their comments gave the impression that two engineers working independently with the same product and equipment and under the same union and management constraints would produce the same manning schedule.[1]

The weak influence of market conditions upon job design was attributed to the fact that both the cost of plant space (a constant preoccupation of management even in new plants) and the costs of managing and coordinating production were functions of the total number of workers. The cost of job design, therefore, was dominated by the number of workers which it required, and substitutions designed to overcome skill deficiencies inevitably increased this number.

The weak influence of the labor market may also be attributed to other constraints. Among these are managerial techniques, the payment system, custom, the collective bargaining contract, health and safety standards, and plant work rules. Further constraints are imposed by the principles of industrial engineering.[2] These principles may have more or less objective validity, but they are nonetheless believed valid by the engineers.[2]

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[1] Cf. Louis E. Davis, Ralph R. Canter, and John Hoffman, "Current Job Design Criteria," The Journal of Industrial Engineering, VI (Mar.-Apr. 1955), pp 5-8.

[2] See, for example, William Grant Ireson and Eugene L. Grant (eds.), Handbook of Industrial Engineering (Englewood Cliffs, N.J.: Prentice-Hall, 1955), particularly the articles by Dale Yoder (pp. 173-282), and William Gomberg (pp. 1121-84) for the constraints imposed by managerial techniques, engineering principles, and trade unions, respectively.

It is apparent that formal design is only one facet of the process of defining jobs for new equipment. A second facet is experimental job design. Indeed, the typical manning procedure for new equipment was to overman initially, then to modify the original pattern gradually once the equipment was in operation by redistributing tasks and combining jobs. The guiding principle in this process, as in formal job design, was minimization of the number of workers. But skill availability probably enters the process indirectly. In experimental job design, the manning schedule ultimately adopted will depend upon the capabilities of the workers who participate in the experiment. Jobs, in other words, are tailored to the employees initially assigned to them. Thus job requirements are automatically adjusted to their skills and other attributes. Some adjustment of this kind takes place on old jobs as well. As the operators assigned to them change, the jobs automatically change to conform to the new operators' capabilities.

Experimental job design is only possible, however, when management is free to change the manning pattern after the equipment is installed on the plant floor. While management retained this freedom in all of the plants observed, it is severely restricted by union rules in some enterprises.

II. Formal Job Design and Technological Change as Instruments of Labor Force Adjustment

Relative labor scarcities affect the innovation and job design process only when they pose operating problems. When workers cannot acquire

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1. A much wider disagreement is present in the scholarly literature about the optimal job design than was evident in the comments of industrial engineers in the visited plants. See, for example, Eaton H. Conant and Maurice D. Kilbridge, "An Interdisciplinary Analysis of Job Enlargement: Technology, Costs and Behavioral Implications," Industrial and Labor Relations Review, Vol. 18 (April 1965), pp. 377-95.

necessary skills, when high turnover jeopardizes equipment or quality control, or when job vacancies are holding up production, new equipment or work methods may be introduced to avoid production bottlenecks. These adjustment instruments, however, are utilized only when less constrained instruments, such as reductions in hiring standards and training, are ineffective in resolving the manpower imbalance.

Many employers interviewed did identify innovations which they believed had eased the burden of labor scarcities. But closer examination revealed that most of these innovations were introduced on the basis of standard cost calculations and their "skill saving" benefits were discovered only after the equipment was installed.

Longer production runs, a factor indirectly related to tight labor markets, was found to exercise an influence upon job redesign. Long production runs reduce the need for a flexible, broadly trained labor force. Instead, worker specialization, mass production techniques, and the use of specialized machinery became more efficient work procedures.

In several electronics companies studied, small scale production required engineers and technicians to design and debug the equipment as part of the assembly process. When the length of production runs increased, these companies invested in simplified assembly procedures and utilized semi-skilled female assemblers assisted by a small number of technicians.

A machine tool company with an elaborate industrial engineering department was operating under two production principles. For "job shop" items, skilled machinists fabricated the parts, with general purpose equipment, working from blue prints. They made their own set-ups, layed out the work, and selected the appropriate tools. For long runs, however, the industrial engineering department would carefully define production procedures, specifying the material layouts, tools and machine speeds for semi-skilled operators. Similar principles governed the introduction of special purpose machine tools, jigs, and other skill-saving devices.

A number of minor instances of job redesign were also encountered which could be attributed unambiguously to "bottleneck" factors such as rising scrap rates or unfilled job vacancies. In all instances these bottlenecks arose from high labor turnover and training constraints.

One instance of job redesign conserved scarce skills by postponing some of the less critical skilled work such as preventive maintenance. In one electronics company the scarcity of electronics technicians prompted the company to install simple testing devices operated by semi-skilled workers, thereby releasing technicians for the most highly skilled portion of the job, the repair of faulty systems.

In another electronics plant, an automatic spot welding machine was introduced after a particular welding operation developed quality control problems. Analysis of the problem by the industrial engineering staff revealed that the job required several weeks of training and that high turnover was impeding the training process. Forced either to reclassify the job into a higher labor grade to reduce turnover or to introduce an automatic machine, the company chose the machine.

Companies also considered ways of redesigning jobs so that they could be filled by women, a more readily available source of labor,/ instead of men. Several apparel companies substituted pneumatic pressing machines for older, foot-operated models so that they could be operated more easily, and two machine tool companies began to recruit women for light drilling and lathe operations. The latter arrangement did not entail job redesign per se, but required a reorientation of foremen's attitudes and the conversion of lavatory facilities.

III. Implications for Structural Balance

The efficacy of adjustments in productive techniques as a mechanism for achieving structural balance in the labor market may be questioned on several grounds. First, in order to avoid structural imbalance, rather than simply to eliminate imbalances once they appear, the enterprise must anticipate changes in relative wages, and it is not at all clear that it can do so. Second, the elasticity of substitution among types of labor may be limited by fixed capital equipment. To the extent that this is so, existing equipment will inhibit adjustment until it is replaced with equipment whose labor requirements are compatible with the available labor supply. Third, there is considerable evidence that relative wage rates, particularly within a plant, respond imperfectly to market scarcities.[1] Scarcities will then make themselves felt in other components of cost, hiring costs, training costs, labor productivity and the like, but such costs are difficult to isolate and attribute to different types of labor. Finally, one important determinant of productive technique, technological innovation, is exogenous to the neoclassical model. Several theorists have attempted to deduce mechanisms from the accepted neoclassical assumptions which would subject the impact of innovative activity upon factor proportions to market control. But they have thus far been unsuccessful.[2] Very little is known about the way in which the search for innovation is conducted and the extent to which it is influenced by relative labor scarcities.

Succinctly put by one engineer, enterprises "mold men to jobs, not jobs to men." The procedures used within the enterprise to select productive techniques do not respond to the relative scarcities of different types of labors although they appear to be consistent with the assumption of cost-minimization.[1] Engineers frequently maintained that the cost of tailoring jobs to the available labor force was simply unwarranted by the gains to be had from doing so. This implies that, if major structural bottlenecks develop, widening cost differentials between various types of labor will eventually overcome the cost of considering alternative manning arrangements, and enterprises will be induced to seek out techniques which substitute surplus labor for the kinds of labor in short supply.[2]

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[1] See, for example, Lloyd Ulman, "Labor Mobility and the Industrial Wage Structure in the Postwar United States," Quarterly Journal of Economics, LXXXIX (Feb. 1965), 73-97; Guy Routh, Occupation and Pay in Great Britain 1906-1960 (Cambridge, England: Cambridge University Press, 1965); E. Robert Livernash, "The Internal Wage Structure" in George W. Taylor and Frank C. Pierson (eds.), New Concepts in Wage Determination (New York: McGraw-Hill, 1957); and G.H. Hildebrand, "External Influences and the Determination of the Internal Wage Structure" in J.L. Meij (ed.), Internal Wage Structure (Amsterdam: North Holland Publishing Co., 1963), pp. 260-99.

[2] See, for example, Paul A. Samuelson, "A Theory of Induced Innovation along Kennedy-Weisacker Lines," Review of Economics and Statistics, XLVII (Nov. 1965), 343-56. This article also incidently reviews the earlier literature on the subject.

The implication of the internal adjustment instruments for aggregate economic policy is that the pressure of costs arising from the adjustment process rather than unemployment is likely to be the more serious aggregate labor market problem. None of the instruments of adjustment are truly "free." If changes in technology were used to overcome labor scarcities, long-term savings generated by the new productive techniques could be offset against the short-run costs of the investment. As has been indicated, however, enterprises cannot identify many of the costs of adjustment. Adjustment costs, therefore, are not accurately anticipated and, when they are incurred, they appear as costs of current output. These costs can, in turn, be translated into the inflationary pressure which accompanies falling unemployment.

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[1] There was some discussion in the interviews of engineers who became so interested in the technical perfection of their designs that they ignored cost consideration. But the managerial personnel who participated in the study were so clearly preoccupied with costs that any simplistic abrogation of the cost minimization assumption appeared untenable.

[2] On the other hand, the search and design procedures had been institutionalized. They were not subject to periodic review and, hence, had become resistant to change. Extreme and persistent labor bottlenecks may be required to overcome these institutional barriers. Even the wartime labor shortages do not appear to have produced revisions in design procedures.

These conclusions must be interpreted cautiously. The failings of the neoclassical adjustments within the manufacturing plant are not of recent origin; therefore, they cannot be responsible for any of the structural maladjustments alleged to have arisen in the recent past. The data does suggest that, in attempting to explain that degree of structural balance which has been achieved, and in assessing the capacity of the economy to effect such balance in the future, attention must focus upon other adjustment mechanisms. The important mechanisms may be others suggested by neoclassical theory: the selection of productive technique in nonmanufacturing enterprises, the substitution of capital for labor,[1] shifts in the distribution of product demand among plants and industries, or changes in the composition of the labor force.

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[1] The fact that the average plant wage rate did influence design suggests that, as long as the wage structure reflects relative scarcities, some adjustment to these scarcities will be effected through shifts in demand among plants. Plants which are intensive in scarce labor will, for example, have a greater inducement to substitute capital than plants intensive in surplus labor. The use of an average wage rate may, however, lead to paradoxical results. It may explain Malcolm Cohen's finding that, in certain labor markets, a rise in the wage of skilled workers relative to unskilled workers leads to an increase in the employment of the skilled relative to the unskilled. Malcolm Cohen, "Determinants of the Relative Supply and Demand for Unskilled Workers," unpublished Ph.D. thesis, Massachusetts Institute of Technology, 1967.

CHAPTER VII

RACIAL DISCRIMINATION IN INTERNAL LABOR MARKETS

In analyzing the problem of employment discrimination and in developing remedies to such discrimination, internal labor markets play a central role. Such markets, as shown in earlier chapters, are designed intentionally to "discriminate." They discriminate by selecting among workers at the ports of entry and by conferring privileges upon the internal labor force which are not available to workers in the external labor market. This discrimination arises because of the job security and advancement opportunities which the internal work force derives from the internal labor market and from the economies of developing and retaining a trained work force which such markets provide to employers. Discrimination in this sense has a clear economic and social rationale for both employers and workers and need not have racial implications.

Racial discrimination, however, does occur through the rules which define internal labor markets and govern their operation. Sometimes the discrimination is an incidental byproduct of distinctions made for other purposes, such as when educational requirements which exclude disproportionately more blacks than whites are uses as a screening device or when employers in white suburbs recruit workers exclusively from among local residents. In other cases, race is a significant consideration in decisions affecting entry, internal allocation, and wages.

Before 1964 it was common, especially in the South, for race to be an explicit determinant of hiring and promotion patterns. Since 1964 and the passage of Title VII of the Civil Rights Act, written rules no longer make mention of race. Substitute rules, however, are written with race in mind and informal customs are continued so as largely to maintain racial employment patterns.

This Chapter focuses upon employment discrimination in the internal labor market and the problem of formulating remedies to such discrimination. In the first section theories of employment discrimination are examined; in the second section various types of internal discrimination are discussed; the third section analyzes the role of unions in effecting discrimination; and the fourth section deals with remedial arrangements.

I. Legal and Economic Concepts of Employment Discrimination

Where discrimination of various kinds results in the exclusion of racial minorities from certain types of jobs it can be dealt with through a variety of policy instruments. The equalization of educational opportunity for blacks and whites, skill training, the elimination of residential segregation and so forth, constitute a class of programs directed at helping racial minorities to improve their competitive position in the labor market without changing the rules under which labor markets operate. In contrast, anti-discrimination legislation is a policy instrument which operates directly upon the internal labor market by changing the rules governing the hiring, allocation, and pricing of labor. A brief discussion of federal anti-discrimination policies will serve to illustrate the complex of problems surrounding the implementation of such policies.

Legal Concepts

The history of governmental efforts in the field of fair employment practices dates back to the 1940's. A number of states and cities have regulations prohibiting employment discrimination; racial discrimination by trade unions has been clearly illegal since the Supreme Court decision in the Steele Case;[1] and the history of executive orders requiring nondiscriminatory employment practices by federal contractors extends back to the Roosevelt administration. For a variety of reasons, however, those earlier efforts had only a very limited effect and provided little experience upon which to base the policies of the 1960's.[2]

The 1960's witnessed the first serious efforts on the part of the federal government to attack racial discrimination in employment. The major instruments directed toward this end were the Federal Executive Orders prohibiting racial discrimination by federal contractors and Title VII of the Civil Rights Act of 1964 banning discrimination by employers or unions. The executive orders have been administered by the Department of Labor's Office of Federal Contract Compliance (OFCC) while the machinery for enforcement of Title VII centers in the Equal Employment Opportunity Commission (EEOC), state and local fair employment practices commissions, and the Federal courts.

Title VII typifies the dilemma of translating a conceptually simple anti-discrimination policies into operating programs. The legislation and legislative history surrounding it are very brief. They suggest that the Congress started with a naieve concept of employment discrimination which assumed that internal labor markets were completely segregated and that unambiguous racial rules were used to exclude minority groups from jobs.[1] As a result, Congress enacted legislation designed to outlaw employment practices based upon race while at the same time seeking to protect the legitimate interests of employers in developing a qualified labor force[2] and of incumbent employees in maintaining job security. These twin objectives, as shall be seen, frequently come into conflict in the internal labor market and one objective cannot be protected without interfering with the other.

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[1] Steele v. Louisville and N.R.R., 323 U.S. 192 (1944).

[2] Michael I. Sovern, Legal Restraints on Racial Discrimination in Employment, (The Twentieth Century Fund, New York, 1966), pp. 143-175.

Economic Concepts

The view that employment discrimination results in racially segregated internal labor markets has also been incorporated into economic models of discrimination. Gary Becker postulates a model, patterned after the pure theory of international trade, in which blacks and whites inhabit separate societies. These societies freely exchange products, but tariff-like preferences for discrimination, imposed by the white society, restrict exchange in factor markets.[4]

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[1] See, for example, 110 Cong. Rec. 6996 (Citation from the daily edition).

[2] See the memorandum on Title VII by Senators Clark and Case, 110 Cong. Rec. 6992, and Senator Clark's response to Senator Dirksen's memorandum, pp. 6992, 6997.

[3] See Gary S. Becker, The Economics of Discrimination, (Chicago: University of Chicago Press, 1957).

More recently, Lester Thurow has developed an alternative theory in which whites act as discriminating monopolists.[1] By virtue of this monopoly power, whites establish hierarchical employment relationships, having both economic and social dimensions in which blacks occupy jobs that are inferior to those held by whites. In Thurow's theory, as in Becker's, racial discrimination is to be understood as a product of a rational attempt of whites to maximize their well-being.

Such an analysis of discrimination is particularly congenial to economists. It suggests that the elimination of discrimination will increase competition. Such a step is generally thought to move toward a more efficient use of resources and hence a larger national income. For several reasons, however, such an analysis does not provide a correct understanding of the mechanisms of discrimination and it implies a degree of harmony among the society's various social and economic goals which is misleading.

Internal Labor Markets

Internal labor markets are established, in part, because the work force values the job security and advancement opportunities which they provide. Inherent in this analysis of the internal labor market is an element of monopoly over jobs. But the internal market is not simply a product of employee interests in job monopoly. It is also the product of employer interests in minimizing the fixed costs of recruitment, hiring and training. Where these costs exist, it is by no means certain that the abolition of racial discrimination in the internal labor market will raise economic efficiency.

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[1] See Lester C. Thurow, Poverty and Discrimination, (Washington, D C : Brookings Institution, 1969).

Second, the rules governing the internal market are seldom the product of a single factor alone. They generally represent a compromise between the interests of the employer and employees, and are conceived in the context of the totality of factors governing labor allocation and pricing. Hence, it is not generally possible to change the distribution of jobs between the races without affecting the efficiency of recruitment, screening and training. The elimination of racial discrimination is likely to raise the inefficiency of the labor force adjustment process, at least in the short run, thereby imposing costs upon both the employer and the society. Only where the effect of discrimination has been to create a grossly inefficient internal labor market will there be offsetting benefits to the employer and society.

Third, the attack upon racial discrimination in internal labor markets occurs within an economic and social context in which, as a general rule, discrimination is permissible and in the interest of both the employer and the white work force. The inherent equity of an attack upon racial discrimination is thus not always as clear to those within the market as it is to outsiders, and efforts to eliminate racial discrimination are often viewed by the employers and employees as an attack upon the instruments which effect labor market adjustment and preserve job security. Given the difficulty of separating the racial impact of internal allocative rules from their other effects, they may indeed be correct. This is partly true in the case of construction unions that proclaim that it is a concern with training and job security, rather than prejudice, that excludes blacks. Similarly, in enterprise internal labor markets, the seniority and job security of blacks and whites in different departments or job classifications may be at stake if internal discrimination is to be eliminated. In almost all cases, the full effects of racial discrimination cannot be remedied without costs being imposed upon the incumbent work force in terms of job security and promotion opportunities. This in turn is often perceived as a threat to the entire rule and equity structure of the internal labor market.

The implication of these considerations is that insofar as Congress intended Title VII to bar rules designed to monopolize employment privileges for one race without interfering with rules developed to achieve other legitimate goals it imposed a difficult, and perhaps inconsistent, task upon the EEOC and the courts. The theory that racial exclusion is an "all or nothing" type of monopoly and that racial employment practices are embodied in single purpose administrative rules is incorrect. Most rules governing internal labor markets are not designed to effectuate racial monopoly alone, but are part of the total fabric of labor pricing and allocation. Because they several goals which Congress sought to effectuate are not compatible, the courts must weigh the costs to society as a whole and to the various groups within it, of the changes in the rules which they are being asked to mandate. The analysis which follows is designed to provide an understanding of these costs.

II. Types of Discriminatory Practices

In practice, racial discrimination can occur through any of the eleven instruments of labor force adjustment: recruitment, screening, compensation and so forth. There are, however, three major categories of instruments--entry, internal allocation, and wages--through which most employment discrimination is effected.

1. Entry Discrimination

On its face, entry discrimination is the least complex form of employment discrimination. Conditions for entry into most internal labor markets are readily defined and it should, in principle, be relatively easy to determine whether they discriminate unfairly on the basis of race. If they do, it should not be difficult to eliminate the discriminatory practices. The superficial simplicity of the problem is, however, deceiving. The identification of discrimination and the fashioning of a remedy is complicated by several factors.

First, as suggested in earlier chapters, in enterprise markets, recruitment, secreening and hiring procedures are among the most loosely constrained instruments of manpower adjustment available to management. These instruments have not generally been the subject of review by either federal agencies or by trade unions and thus, unlike standards for internal promotion or wage determination, have been largely a management prerogative. As such, they have only rarely been evaluated against an objective standard and depend largely upon the judgment of personnel managers and foremen.

Hiring Standards and Screening Criteria

Hiring standards, for example, tend to fluctuate with the state of the external labor market and with changing anticipations of future technology. This permits deliberate discrimination to be practiced under the guise of objective procedures utilized to insure a competent work force. Thus, when overt discrimination is made illegal, those employers continuing to seek to exclude blacks and other minorities can do so by imposing exceedingly high educational and testing standards.[1] These may then be justified by reference to the requirements of jobs at the top of promotion ladders or to forecasts of changing job requirements. If these requirements prove too restrictive in terms of the added recruitment costs incurred by the enterprise, they can be relaxed obstensibly to adjust to a temporarily tight labor market. In the extreme, the company could relax the standards and hire only when there were no black applicants. But this is seldom necessary since minorities learn where they will not be hired and do not waste time applying there. Here, as elsewhere, it is difficult to administer the law so as to prevent this evasion without curtailing the legitimate use of hiring instruments to adjust the changing market conditions and job structures.

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[1] The operation of education as a screening device can be discerned in the empirical relationship between education, on the one hand, and unemployment and income on the other. See Harry J.Gilman,"Economic Discrimination and Unemployment", American Economic Review, vol. LV, no.5, part 1, December 1965, pp.1077-1096. Stephan Michaelson has demonstrated, however, that the narrowing of educational differences between Negroes and whites in recent years has not been accompanied by a corresponding reduction in income differentials. See Stephan Michaelson, "Rational Income Decisions of Negroes and Everybody Else,",Industrial and Labor Relations Review, vol. XXIII, no.1, October 1969, pp.15-28.

Additional opportunity for discrimination comes through the hiring process itself. Hiring decisions are often made on the basis of both objective criteria, such as education

and in interviews where more subtle criteria such as speech and deportment are applied. Even the managers find such standards difficult to specify and their informality permits racial discrimination to be practiced. The assertion of effective control over these procedures, whether by a government agency or by the enterprise's own management, requires essentially the same type of modification in hiring rules that occurs in internal promotion procedures when a union organizes a plant and forces the foremen to operate within the framework of a collective agreement.

A second aspect of entry discrimination derives from the nature of the screening criteria used to implement hiring standards, As indicated in Chapter V, the only true test of ability for most jobs is job performance on the job. The criteria upon which hiring decisions are based are surrogates for such performance, and there is little evidence of a causal relationship between the two. They may be statistically correlated, but such a relationship is seldom empirically validated. Instead, the screening criteria, like hiring standards are based upon the subjective judgments of line supervision and personnel managers whose perceptions may be distorted by racial prejudice.[1]

Because hiring standards and screening criteria are not perfectly correlated with job performance, they are subject to two kinds of error: the error of rejecting a qualified candidate and the error of accepting an unqualified one. There is a trade-off between these two types of errors and they can only be reduced simultaneously by increasing the costs of screening. As indicated in Chapter V, internal markets provide job security by making discharges difficult and the employer, faced with choosing to reduce one error at the expense of the other, will most often reject workers who are actually qualified but whose qualifications are expensive to uncover. In the case of minority groups, inadequate experience in developing suitable screening criteria may, at least initially, raise screening costs and therefore deter their employment.

Some portion of what appears to be racial discrimination is probably generated by these screening costs. Race is an inexpensive screening criterion.

> Where two racial populations differ significantly in terms of the proportion of persons possessing certain desired characteristics, the most efficient, unprejudiced hiring policy may be simply

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[1] See Ivar Berg, Education and Jobs: The Great Training Robbery, (New York: Praeger Publishers, 1970).

to reject all members of one racial population.

Congress appears to have been completely unaware of this problem when it passed the Civil Rights Act of 1964. It appears to have meant to require that candidates be admitted solely on the basis of ability to perform the work, and it sought to legislate the hiring of all qualified candidates without in any way requiring the hiring of unqualified workers. Because of the statistical nature of hiring criteria, any rule which admits all qualified workers will inevitably admit some unqualified workers: a rule that excludes unqualified ones as well. While the conflict cannot be eliminated, it can be reduced, but possible only through screening procedures which impose costs in excess of those which Congress intended to commit the society in Title VII.

Recruitment

A final asepct of the problem of entry discrimination relates to recruitment procedures. Internal labor markets tend to establish rather stable channels of recruitment. Most important are the incumbent employees who refer friends and relatives to the internal market.[1] Supplementary channels include community organizations (churches, civic groups, etc.), a select group of educational institutions, various types of employment agencies, and a limited list of advertising media. Depending upon the state of the external labor market, some or all of these channels may be active, but the number of channels is definitely limited.

Reliance upon a limited set of recruitment channels has advantages to both the employer and to potential employees. For the employer, it acts, in part, as a screening procedure. Candidates recruited through customary procedures tend, again as a statistical proposition, to have certain known characteristics. In the case of recruitment through relatives and friends, applicant characteristics tend to resemble those of the incumbent labor force. Similarly, formal recruiting channels tend to yield applicants who, as a group, possess certain predictable characteristics.

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[1] See Chapter V. Also see, Lloyd G. Reynolds, The Structure of Labor Markets, (New York: Harper, 1951); and Harold L. Shepperd and A. Harvey Belitsky, The Job Hunt, (Baltimore: Johns Hopkins Press, 1966).

Moreover, potential candidates learn to check regularly with established recruiting channels so that a given advertising effort evokes a larger and quicker response in established channels than it does in new ones. Recruitment through established channels has similar advantages to applicants. Friends, relatives and counsellors can give them a better idea what the prospective employment is like and this reduces the costs of trial and error job search. This also results in a certain amount of self-screening by the candidates. Those that expect not to be hired or not to like the job do not apply for it.

These benefits encourage any set of recruitment channels to be perpetuated once they are established and discriminatory recruitment practices will continue to yield racial employment patterns long after discriminatory intent has been removed. To break the existing patterns, employers must establish new recruiting channels which reach minority groups and this may require a prolonged period of investment before the new channels become as efficient as the old. For example, the cheapest source of referrals--incumbent employees--often cannot serve as a source of minority recruits. New recruitment channels, such as black newspapers, even when essentially comparable in cost to established channels such as white newspapers, may not immediately yield as large a candidate group because the black community does not become immediately receptive to this recruitment. Thus, in recruitment, as in hiring and screening, the elimination of racially biased employment patterns may impose additional costs upon the enterprise and upon the society as well.

2. Internal Allocative Rules

Racial discrimination within the internal market is effected in two ways: in the design of mobility clusters and in the criteria which determine movement within or between them. As with entry discrimination black workers can be denied promotion by restrictive promotion criteria or by limitations upon the posting and bidding arrangements for internal recruitment. Thus, for example, employers have in many Southern plants introduced written tests for promotion in an attempt to evade the requirements of Title VII. Some employers have also shifted from a system of posting vacancies to one of word of mouth communication.

There is, however, at least in enterprise markets, an important difference between the rules producing entry discrimination and those resulting in and internal discriminations: the former rules are loosely constrained and variable, the latter are more precisely defined. In general, internal allocative rules, being less nebulous than entry rules, cannot be as readily adjusted to mask continuing discrimination.

Where internal discrimination does pose unique problems is in the design of mobility clusters. The patterns of racial discrimination in promotion systems can, for the most part, be divided into three broad categories, as shown in Figure I. The least common type (Figure I) consists of two functionally identical mobility clusters which are racially distinct: the two contain the same types of jobs, skill requirements and upgrading opportunities. This is, in essence, the arrangement which existed with respect to the employment of the Negro and white firemen, and of white railway trainmen and Negro brakemen on some railroads during the 1944's and 1950's.[1]

A more typical arrangement is shown in Figure II. Here Negroes are restricted to the lower paying job classifications and mobility clusters. In some establishments these Negro classifications may be unrelated, in terms of on-the-job training, job content, or the focus of work, to other jobs within the market, but there are also examples of apparently efficient training sequences being arbitrarily interrupted to limit the advancement opportunities of persons in the lower paying job classifications. In one steel company, for example, skill related lines of progression were divided so that the unskilled jobs were reserved for Negroes and the more skilled jobs for whites.[2] Traditionally Negroes were excluded from white progression lines, but arrangements were subsequently negotiated between the company and the union to permit incumbent Negroes to transfer into the bottom rung on the white progression line. No transfer of competitive seniority rights was permitted, however.

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[1] See Steel v. Louisville and N R R., supra. and Railway Trainmen v. Howard (343 N.S. 768, 1952).

[2] See Whitfield v. U.S. Steelworkers, Local 2708, supra. Also, NLRB v. Rubber Workers, 150 NLRB 312, 1964.

The third type of discriminatory promotion system, shown in Figure III, restricts Negroes to separate units such as labor pools, less desirable production, warehouse, yard departments, or unskilled job classifications which are unrelated to other jobs forpurposes of promotion. In the extreme case, Negroes may be located in a geographically separate production facility. Here the functional relationships among Negro and white mobility clusters are tenuous or non-existent. While the discrimination may be inferred from the racial composition of the various mobility clusters, discrimination in the design of the promotion system cannot be distinguished from discrimination in hiring or assignment. In some cases the mobility clusters may be reinforced by separate union locals, by NLRB bargaining unit certifications, or by NLRB certifications which have excluded certain groups 6f workers, such as laborers or janitors, from any bargaining unit.

For example, janitors in a southern telephone company, all of whom were Negro, were not included in the bargaining unit.[1] In another case, a southern paper company was organized into two racially segregated locals. The Negroes were employed in the lower paying jobs, and separate collected agreements were negotiated for the black and white units.[2]

Segregation of promotion units may be formally embodied in local collective bargaining agreements or may exist as part of the uncodified,

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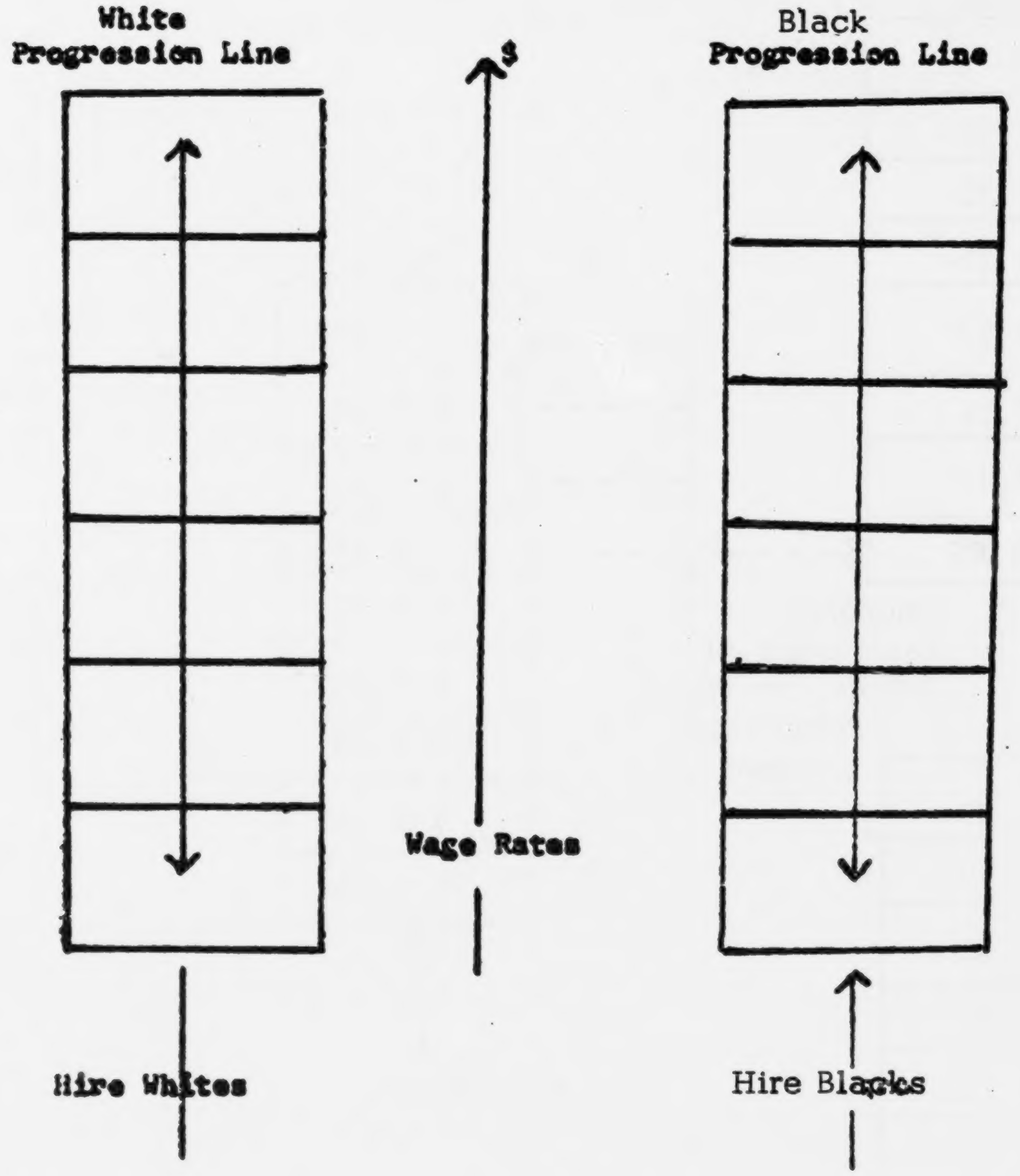
[1] Cited in William B. Gould, "Employment Security, Seniority, and Race: The Role of Title VII of the Civil Rights Act of 1964," Howard Law Journal, vol. XIII, Winter 1967, p.15.

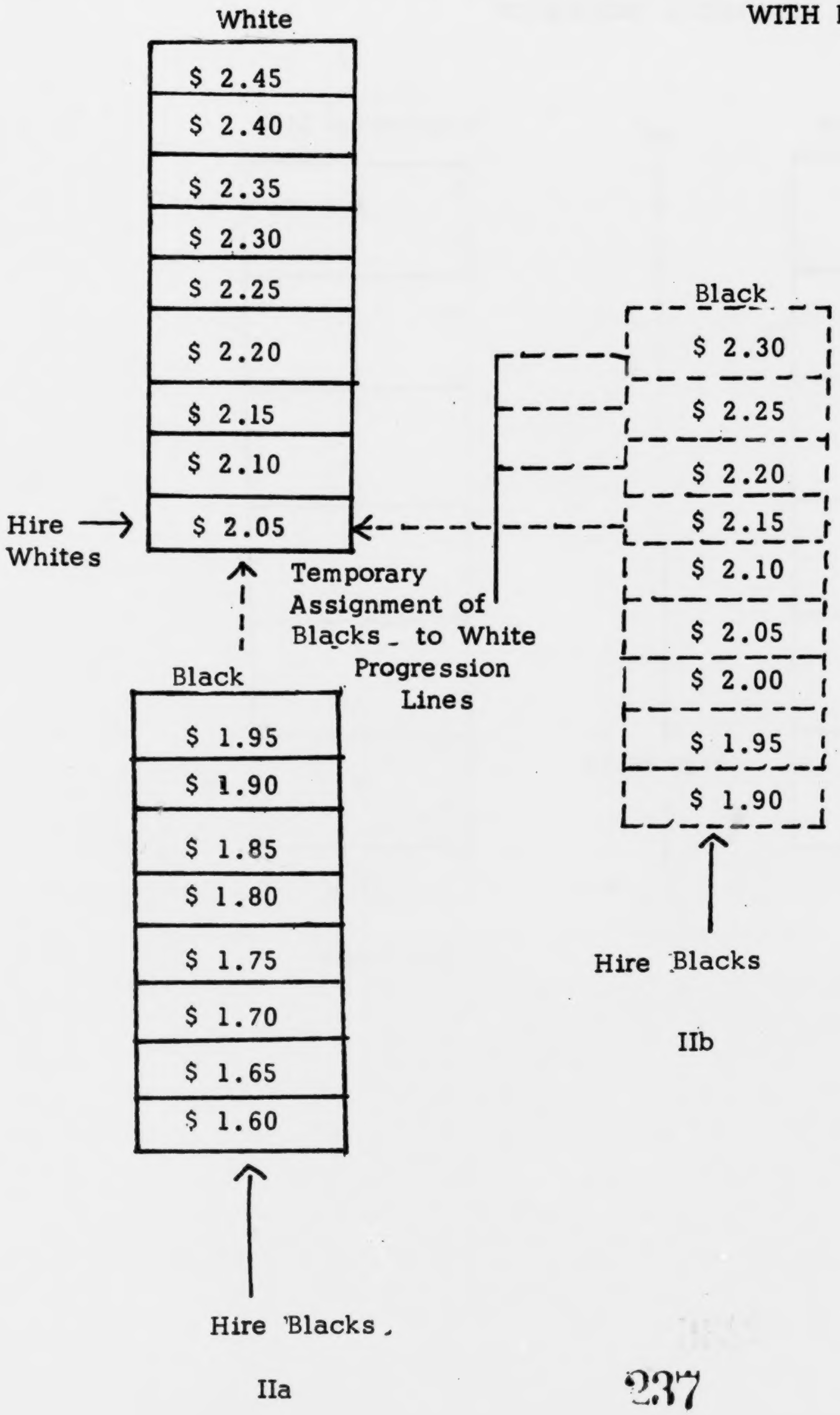
[2] United States V. Local 189, Papermakers, U.S. District Court, March 26, 1968, Civil No. 68-205. A similar situation also held in Syres V. Oil Workers, U.S. Court of Appeals Fifth Circuit No. 15286, June 1955.

FIGURE I

FUNCTIONALLY IDENTICAL PROGRESSION LINES WITH RACIAL SEGREGATION


White
Progression Line
$
Wage Rates
Black
Progression Line
Hire Whites
Hire Blacks

FIGURES IIa and IIb
FUNCTIONALLY RELATED PROGRESSION LINES WITH RACIAL SEGREGATION


White
$ 2.45
$ 2.40
$ 2.35
$ 2.30
$ 2.25
$ 2.20
$ 2.15
$ 2.10
$ 2.05
Hire Whites
Temporary Assignment of Blacks to White Progression Lines
Black
$ 1.95
$ 1.90
$ 1.85
$ 1.80
$ 1.75
$ 1.70
$ 1.65
$ 1.60
Hire Blacks
IIa
Black
$ 2.30
$ 2.25
$ 2.20
$ 2.15
$ 2.10
$ 2.05
$ 2.00
$ 1.95
$ 1.90
Hire Blacks
IIb

informal, procedure by which workers are assigned to, or allowed to bid for, jobs within the internal labor market. Whether by the design of mobility clusters or through bidding and assignment practices, the net result of these systems has been to reduce the economic opportunities of Negroes in the past. This in turn has limited their opportunities to acquire either the requisite in-plant training or the transferrable seniority credits to enable them to compete for present and future promotion on an equal basis with incumbent whites.

3. Wage Discrimination

Determining the extent of wage discrimination is analogous to identifying the impact of unions upon wage rates. Statistical estimation techniques are always hampered by problems of "spillover effects" and collinearity.[1] Most studies of the economic impact of wage discrimination have been limited to comparing the existing income distribution of non-whites to the hypothetical distribution which would prevail under various assumptions regarding equalizing of white and non-white employment opportunities.[2] No studies, however, have attempted to measure the impact of wage discrimination at the enterprise level. Much of this section must therefore be speculative.

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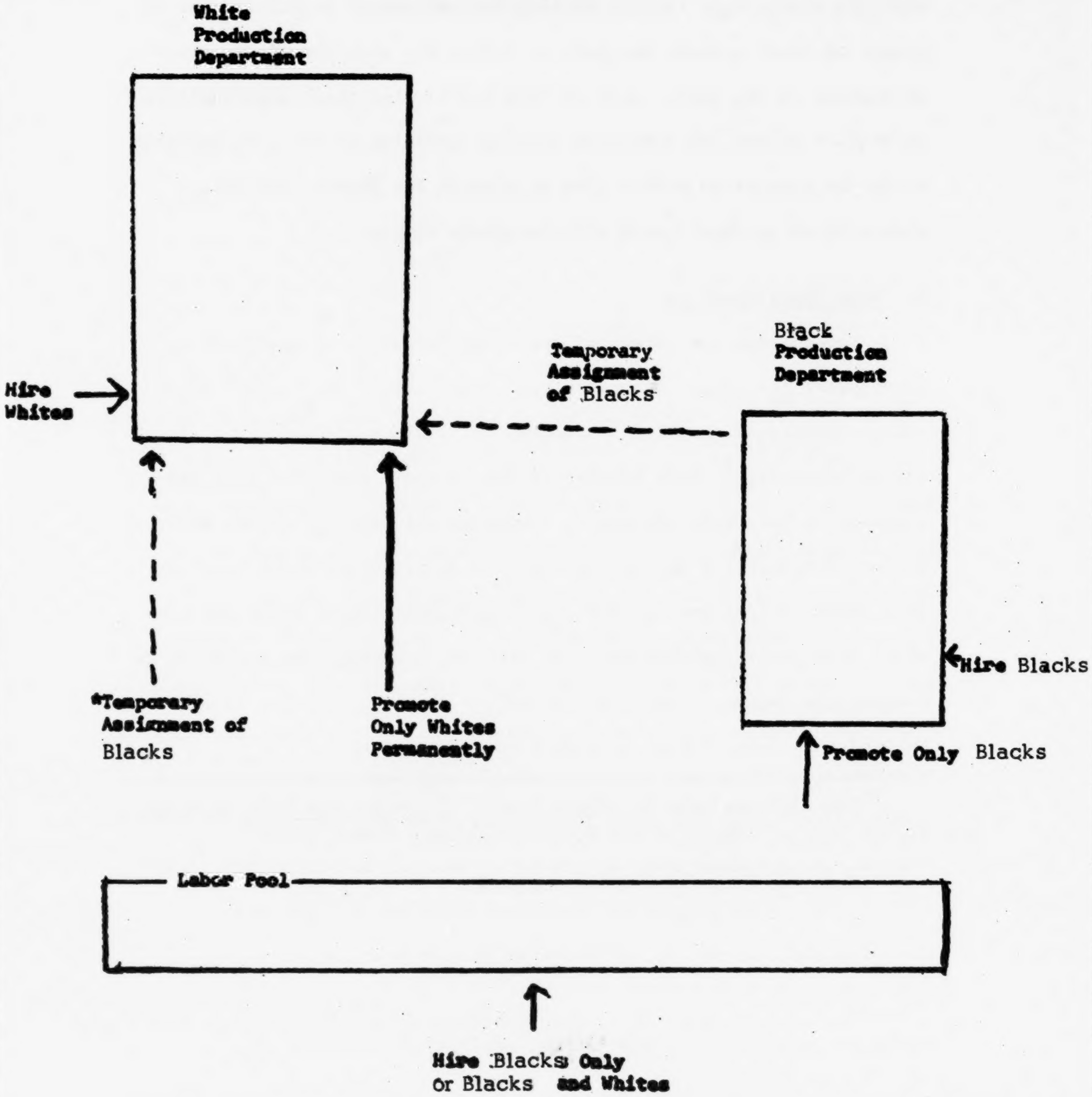
[1] See, for example, H. Gregg Lewis, Unionism and Relative Wages in the United States, (Chicago: University of Chicago Press, 1963).

[2] See, for example, Thurow, op. cit.

FIGURE III

FUNCTIONALLY UNRELATED PROMOTION UNITS WITH RACIAL SEGREGATION


White Production Department
Hire Whites
Temporary Assignment of Blacks
Black Production Department
*Temporary Assignment of Blacks
Promote Only Whites Permanently
Hire Blacks
Promote Only Blacks
Labor Pool
Hire Blacks Only Or Blacks and Whites

***Note: In some instances** Blacks **may be assigned temporarily to the white department.**

Inherent in the design of discriminatory seniority systems is an element of wage discrimination. Whenever discrimination prevents Negroes from advancing into higher paying, more desirable jobs in production, maintenance, or supervisory mobility clusters, they will continue to remain economically disadvantaged relative to the white employees within any particular internal labor market.

Other forms of wage discrimination also exist. First, to the extent that discrimination within the internal labor market leads to a clear demarcation between Negro and white jobs in the economy, non-competing groups of jobs are established which cut across a number of internal labor market units. The result of such a market dichotomy must ultimately be reflected in relative wage rates between these groups unless supply and demand change uniformly in both markets over time.

In theory, this market dichotomy could work in favor of either racial group. There is some evidence, however, of actions by white workers to exploit this market dichotomy by systematically seeking to drive Negro workers from traditionally Negro jobs in order to expand the demand for white labor. In the railroads, for example, attempts have been made to preempt jobs for white employees by declaring Negro firemen and Negro brakemen "unpromotable" or "unassignable."[1] Similarly, in the trowel trades during the depression and in many of the rapidly expanding industrial sectors in the South, such as textiles and cigarettes, the jurisdiction of the white labor force has expanded at the expense of the Negro labor force when job opportunities were scarce or when wages and working conditions were improved.[1]

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[1] See Steele v. Louisville and N.R.R. (op. cit.).

It is difficult to estimate the extent to which this separation of markets has affected relative wages. Historically, there has been a wider skilled, unskilled wage differential in the South than in any other region of the country. The traditional explanation for this is the relatively greater scarcity of skilled labor in the South, but some portion of this differential is also probably due to the depressing effects of Negro "spill-over" upon the unskilled wage rate.

The internal wage structure can also be discriminatory. First, external labor market discrimination will be incorporated into the wage rates on the jobs which Negroes are most likely to occupy because the unskilled wage rate on the external labor market is transmitted to the lower ranges of the enterprise wage structure through community wage surveys and job evaluation plans. Second, jobs which are filled through internal promotion of Negroes may be undervalued through the unequal application of job evaluation criteria. In one Southern plant, for example, Negroes have traditionally been hired only for a few of the *most* menial jobs, e.g., janitors, and although other rates were set through job evaluation plans and community surveys, these jobs have never been evaluated at all, and belong to no labor grade. Their rates area always 10 to 15 cents below the entry wage.

There are a number of reasons to believe, *a priori* that internal wage equity has not been assiduously maintained in those cases where discriminatory promotion systems are also operating. First, it has been customary, especially in the South, to relate wage rates on black jobs to one another, rather than to comparable white jobs. This has led to different wage rates on identical jobs, such as elevator operators or fork lift truck drivers, which are common to black and white departments. Second, given prevelant attitudes about the tolerance of Negroes for unpleasant work, it would not be surprising if job classifications held by Negroes have been undervalued in terms of working conditions.

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[1] See F. Ray Marshall, *The Negro Worker*, (New York:Random House, 1967), p.82.

Moreover, if managements have devoted greater efforts to improving working conditions in white jobs than in Negro jobs, this disparity is likely to have increased over time.

Little evidence is available on this matter, but in at least one cigarette company it was discovered that separate rates were being paid to two different job classifications common to Negro and white departments. In both cases, machine operations required similar use of tools, responsibility and skill, but the job classification in the Negro department was paid less than in the white department. The wage differentials were 3.6 per cent and 13.4 per cent respectively.[1] If it is assumed that job evaluation plans and inter-personal wage comparisons encourage greater consistency of wage structures within mobility clusters than between them, then there is reason to believe that the entire Negro mobility cluster was underpaid. Conversations with employers and union officials further suggest that problems of wage equity and of wage grievances are generally given much less consideration in Negro jobs than in white jobs.

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[1] See Quarles v. Phillip Morris, Inc., 279 F Supp. 505 (1968).

4. Trade Unions

Very little has been made in the preceding sections about trade union responsibility for internal market rules. To the extent that trade unions simply express employees' intersts, omission is not unreasonable. It is . consistent with the belief that the rules observed in union shops are similar to the customary laws governing non-union internal markets, and that the major impact of the trade union is not to create rules but to make them visible to the outsider.

However appropriate this treatment of trade unions is for analysis elsewhere in the volume, it is less satisfactory in the present context. The attempt to eliminate discrimination by law presupposes an individual or institutional responsibility for that discrimination against which sanctions can be sought, and this creates the practical problems, at some juncture, of assessing responsibility between employer and trade union.

Types of Union Practices

Unions have actually adopted a variety of positions with respect to employment discrimination. In some cases, most notably the United Mine Workers in the South, unions have opposed existing patterns of discrimination and have gradually accomplished some reduction in the discrimination against minority groups within their jurisdiction.[1] More commonly unions have merely codified existing patterns of discrimination and, by formalizing what previously were discriminating customs, have fixed these patterns more firmly. While this process tends to deter the elimination of discrimination, it has sometimes protected black employment rights against further encroachment by white. Finally, some unions have actively extended discrimination by seeking to push blacks out of jobs and replace them with whites.[1]

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[1] See F Ray Marshall, The Negro Worker, op. cit., and Labor in the South, (Cambridge: Harvard University Press, 1967).

Perhaps the best way to illustrate the latter two union effects, the codification of customary rules and the displacement of blacks, is by detailed reference to the case of a Southern Paper Mill. This mill had been organized by the Paper Workers in the late thirties, and in 1966 the black employees were confined to the labor pool and to a few short lines of progression containing menial or dirty jobs in the pulp mill by the seniority provisions in the collective bargaining agreement.[2] Before the plant had been organized, blacks had apparently worked all over the plant, but always at laborer's wages. Apparently the custom in the plant was to assign blacks only to menial jobs but, prior to the advent of the union, the custom was abridged in various ways. For example, a white craftsman might occasionally "adopt" a black worker, teach him some parts of the trade, and use him as an assistant to lighten his work load. Or the foreman, in an emergency when nobody else was available, might assign a black worker temporarily to a normally white job and then, seeing he did well, might reassign him subsequently. Occasionally, the job would go to the black worker on a permanent basis when it became vacant and some "white" job classifications eventually became "black."

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[1] See Steel v. Louisville and N.R.R., op. cit.

[2] For a similar case see Hicks v. Crown-Zellerbach Corp., 69 L.R.R.M. 2005.

After the plant was organized, the customary practice of assigning blacks to menial jobs was formally codified in the collective agreement. There was, however, one critical change resulting from the written agreement. Whereas previously the assignment of blacks to jobs occurred informally, and temporary assignment of black workers to white jobs could sometimes create new precedents for allocative patterns, such "accidental" precedents were not allowed under the formal contract. As a result, the union, in codifying the broad outlines of allocative custom and in policing the agreement, forced conformity with prevailing custom and aborted what might otherwise have been an evolution toward wider black job opportunity. The effect was to push blacks back into menial jobs, not by creating rules, but by writing them down.

While it could be said that, by requiring a codification of prevailing custom, the union is responsible for the discrimination, it is not clear how helpful that observation is in the formulation of a remedy. There is a complex interplay between custom, codification of rules, and the union's expression of white employees' interests, which may confuse the analysis of union repsonsibility for discriminatroy practices.

Craft vs. Enterprise Markets

In understanding the influence of unions upon employment discrimination it is also useful to bear in mind the distinction between enterprise and craft internal markets. This is particularly important when considering institutional responsibility for remedies.

In enterprise markets, the union's role in determining and administering the allocative and wage structures tends to be relatively passive. Management plays the active role in initiating decisions and it is managerial activity which must be reviewed when discriminatory practices are being eliminated. In craft markets, the union tends to play the active role and its administrative practices must be controlled. Thus, for example, in the construction industry, the union controls the hiring hall, and it is union activity which therefore must be monitored.

The second difference between enterprise and craft markets is that, in the former, job security is usually achieved through control over internal allocation, while, in the latter, security is effected through control over entry. As a result, discrimination in craft markets tends to manifest itself in racial exclusion, while in enterprise markets it operates through the rules governing compensation and internal movement as well as entry.

Entry standards in craft markets are not generally as responsive to variations in external market conditions as they are in enterprise markets. The security which in enterprise markets is supplied by seniority and limited entry ports is provided in many craft markets by limiting entry criteria and these are not loosened merely because the external market is temporarily tight. This does not mean that entry procedures are necessarily more formal in craft markets than in enterprise markets, indeed they can be quite informal and subjective.

Craft markets appear to rely even more heavily upon relatives and friends for recruitment than do enterprise markets. In part this is explained by the unions' control over seniority to generate the job security, entry decisions in craft markets, and the bias this imports toward the interests of the labor force. Because all members of a single craft tend to be paid the same rate, and because underqualified craftsmen can weigh down the group productivity to which that rate is linked, there is a countervailing concern with the qualifications of new entrants. But this conflict has, at least historically, been resolved in favor of relatives and friends to a far greater extent than is the case in enterprise markets. In any case, the unfamiliarity with the use of formal recruitment mechanisms which results from this extreme dependence upon relatives and friends may be in part responsible for the difficulties which construction unions report in recruiting minority apprenticeship candidates.

IV. Remedies for Discrimination

1. Entry Discrimination

As was seen in the earlier sections, racial employment patterns generated by entry discrimination are closely connected to: (1) the informality of the screening and recruitment process, (2) the variations in this process caused by changes in job content and in external market conditions, (3) the statistical nature of screening, and (4) the advantages to employers and workers of reliance upon a limited set of recruitment channels. These characteristics of hiring make certain exclusions on the basis of race economically efficient, quite independently of racial prejudice or the desire of workers to limit entry and monopolize jobs. Moreover, they provide a means of evading legal prohibitions upon racial discrimination which is difficult to eliminate without interfering with non-discriminatory hiring practices in a way which limits the economic efficiency of the enterprise. In formulating remedies to discrimination, government agencies and the courts must balance the elimination of racially discriminatory employment pattern against economic efficiency.

The analysis embodied in this volume is of little immediate aid in weighing these conflicting social goals. The analysis does imply, however, that the costs of changing hiring standards will vary with the conditions surrounding each internal market and points to a philosophy of case by case adjudication rather than to the creation of a set of general rules to apply to all employment situations. It can also provide some indication of interactions between various aspects of industrial relations policies which may not be intuitively obvious and which may be helpful in assessing evidence and in fashioning remedies in individual cases.

Informality of Screening Procedures

To achieve any degree of control over discrimination occurring through screening procedures will require the formalization, precise definition and validation of screening criteria.[1] This is most obvious in the case of screening decisions based upon deportment during employment interviews. Similarly, the evaluation of test scores and educational requirements at predictors of job performance will also be necessary to avoid the substitution of *de facto* for *de jure* discriminatory rules.

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[1] Formality, for example, creates rigidity in those procedures and can make integration of the internal labor market easier. In a number of cases, building trades unions have been persuaded to state the conditions and times under which workers can compete for openings in

Screening Criteria and Promotion Ladders

The extent to which the requirements of higher level jobs to which entry positions provide access should be permitted to justify excessively high entry qualifications depends very much upon the structure of the internal labor market and the rules governing internal movement. Of particular importance is the "shape" of the seniority districts or lines of progression. When districts are pyrimidal so that the number of employees at each level of progression is in excess of the number at the level above, higher level jobs need not necessarily determine entry qualifications inasmuch as non-promotable employees can be bypassed.[1] Where the progression

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apprenticeship programs. This has provided civil rights organizations with an opportunity to prepare minority group workers to compete for jobs under a fixed set of "rules of the game." In New York City, the Workers' Defense League has been able to recruit and to train Negro teen-agers in a "pre-apprenticeship" program to enable them to gain entrance to previously all White apprenticeship programs. In this way, rules which may have been established to exclude Negroes can also serve as a device for undermining discrimination. (See Edward C. Pinkus, "The Workers' Defense League" in Peter B. Doeringer (Ed.) *Programs to Employ the Disadvantaged, op. cit.*

But rigidity also has its costs. When flexibility of one instrument of manpower adjustment is reduced, other, less efficient instruments must be utilized, thereby raising overall adjustment costs.

[1] Some companies with lines of this shape use dual screening criteria: they carefully screen enough candidates to insure that among the entrants will be a sufficient number of qualified for promotion. The remainder of the candidates are screened less carefully: they have an equal opportunity for promotion if qualified, but the company knows less about their qualifications at time of hire.

line is a narrow ladder with one job at each level the requirements of higher level jobs loom much larger in entry criteria. In all cases, the rate of promotion and the proportion of "non-promotables" already employed will also determine the relationship between screening criteria and the requirements of jobs filled internally.

The weights attached to seniority and ability and the degree to which jobs in the same line are training related are also relevant in assessing the legitimacy of screening criteria. The strongest case for highly restrictive screening criteria is in internal markets which give great weight to seniority for internal labor allocation and where jobs in a promotion line are training related. When promotion districts do not encompass training related jobs, and the employer is not obligated to promote by seniority, unqualified workers can be bypassed without a loss of efficiency and there is little reason for entry into lower level jobs to be tied to qualifications of higher level work.

The Anticipation of Technological Change

It is difficult to evaluate the proposition that screening criteria are related to anticipated technological change, since the skill requirements of technological change are inherently difficult to predict. Nonetheless, it is important to bear in mind the point, emphasized in Chapter VI, that initial estimates of the skill requirements for new technologies are generally adjusted downward over time. As a result, the long run skill requirements of machinery are generally exaggerated by looking at the requirements when it is initially introduced. The proposition should also be evaluated against the internal allocative rules.

Where the rules give great weight to ability in internal promotion, an employer is not necessarily obligated to man new technologies with incumbent employees and entry decisions need not be as closely tied to anticipated technological change.

External Market Conditions

Day-to-day variations in screening criteria variations which systematically result in the exclusion of black candidates cannot be readily separated from the legitimate response of employers to external market conditions. Nonetheless, if such a discriminatory policy is pursued over a period in which there is a flow of black applicants, it should be accompanied by other adjustments in manpower utilization in the enterprise. Not hiring workers on days in which the flow of black applicant is large will either result in job vacancies and uncovered positions, in overmanning as the enterprise attempts to stockpile labor against days on which hiring is deterred, or in erratic subcontracting. This is, at best, circumstantial evidence of discriminatory intent, but it should not be overlooked in assessing fairness of screening practices.

Quotas and Targets

In considering remedies to entry discrimination it should be noted that racial employment quotas are an alternative to formalizing and validating screening procedures or specifying certain recruitment procedures. Quotas have the advantage of specifying a desired set of results without tying the employer to a particular set of remedies which may be particularly inconsistent with efficient resolution of the problem.

The use of quotas and targets is a matter of some controversy and is generally thought to be prhibited by Title VII of the Civil Rights Act which says that

> Nothing in this title shall be interpreted to require any employer...[or] labor organization...to grant preferential treatment to any individual or to any group....on account of an imbalance which may exist with respect to the total number or percentage of persons of any race....employed by any employer....referred by any labor organization,.... or admitted to.....any apprenticeship program, in comparison with the total or percentage of persons of such race..... in any community.....[1]

Quotas, however, probably provide the most effective device for ensuring results. Even where not binding, they may be an especially useful management instrument for convincing operating personnel of the need for demonstrating results as opposed to token compliance with remedial procedures. Quotas are a complete substitute for other remedies and render concern with procedural details, such as the validation of testing procedures unnecessary.

2. Promotion Systems

As in the case of entry discrimination, remedying discrimination in internal allocation involves conflicts among several interests which Congress failed to recognize in the passage of Title VII. In most enterprise markets, the design of mobility clusters is a "zero sum game" in which gains in promotion opportunities or job security by one group of workers must always be offset by equivalent losses for other groups of workers. There are, in other words, a fixed number of jobs; if blacks get them, whites do not. Moreover, seniority and promotion arrangements are work rules around which internal customs become exceedingly strong, and changes in such customs tend to be viewed as inequitable, independent of any racial consideration.[1] If this conflict is to be avoided, employers must incur the costs of increasing the number, and possibly the wage rates, of the jobs whose distribution is in question.

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[1] Sec. 703(j) P.L. 83-392 Civil Rights Act of 1964.

Discovering the appropriate balance among the costs to the enterprise, the disrupted employment expectations of white workers, and the employment claims of black workers requires normative decisions which cannot be calculated through technical analysis of the internal labor market. Given a set of normative decisions, however, such analysis should help in constructing efficient remedies to implement them.

Types of Remedies

The diversity of internal market structures is so great and the range of potential remedies so numerous that it is difficult to develop general remedies. It may be helpful, however, to point out that the remedies suggested by recent discussions in law journals have tended to polarize around two positions whereas the actual range of remedies is considerably

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[1] As Cox has pointed out, "from a practical standpoint seniority confers a status more important than a bare contractual undertaking. In practice seniority clauses are usually carried forward from year to yar. Contract and custom create expectations. Expectations create reliance. It is scarcely an exaggeration to say that in some industires, notably railroads, employees build their lives upon seniority preferences in bidding for jobs in a defined pool of work." (See Archibald Cox,"The Duty of Fair Representation,"2 Villanova Law Review 151, p. 164).

[2] See, for example, "Title VII, Seniority Discrimination and the Incumbent Negro," Harvard Law Review, April 1967.

At one extreme are remedies which end discrimination in the hiring of blacks and which offer incumbent black workers access to jobs in previous white mobility clusters in preference to new hires. Under this arrangement, the job security and promotion opportunities of incumbent white employees are completely protected, and discrimination against newly hired blacks is prevented. This remedy is subject to the criticism that it tends to freeze a generation of incumbent black employees into their present mobility clusters while protecting white promotion expectations that have been acquired under previously discriminatory employment rules.

At the opposite pole is the "freedom now" remedy. Proponents of this position argue that past discrimination has deprived Negro employees of their "rightful place" in the job structure of the internal labor market, and that the present effects of past discrimination can only be eliminated by transferring Negro workers to their rightful places in white mobility clusters as rapidly as possible.[1]

Within this range of remedies are an infinite number of combinations of changes in both the scope of the promotion unit and in the rules governing the criteria determining internal mobility. These intermediate remedies have received considerably less discussion in the current literature, but given the complexity of the interests to be weighed, it is likely that intermediate rather than extreme solutions will ultimately be adopted by government agencies and the courts.

Possible changes in the scope of promotion units include arrangements such as the following:

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[1] See, for example, Title VII, Seniority Discrimination, and the Incumbent Negro, Harvard Law Review, April 1967, p. 1268.

1. Dovetailing functionally identical Negro and white progression lines by merging similar job classifications.

2. Broadening the scope of the promotion unit through the merger of white and Negro units by job grade, seniority date, or other objective criteria.

3. Removing barriers to transfer between Negro and white promotion units.

4. Merging less skilled Negro and white job classifications to form multi-department pools or "pans" for the exercise of promotion or transfer rights among the lower skilled, more easily learned jobs, combined with a narrow promotion unit structure for higher skilled jobs.

Changes in the rules governing priorities and criteria for determining promotions, transfers, and layoffs include:

1. Modifications in job bidding and posting procedures to give Negro employees a systematic mechanism for gaining access to previously white job classifications.

2. Allowing black workers to retain partial seniority credits acquired in black promotion districts when transferring into white promotion districts.

3. Modifications in promotion clauses to relax the ability criterion by providing trial periods for promotions, instituting longer training periods to test ability to perform a job, and recognizing an employee's potential for training, as well as his job experience.

4. Establishing programs for upgrading the skills of the lower paid employees in the plant, to enhance their promotion qualifications within the existing rules system.

Job Security

In redesigning seniority districts to remedy promotion discrimination it is important to remember that changes which affect promotion opportunities will also affect job security. For example, if black employees are permitted to transfer into previously white promotion districts, but do not retain accumulated seniority rights for purposes of bumping back into their former districts, enhanced promotion opportunity will carry with it costs of foregone job security. Similarly, if racially determined promotion districts are merged, white workers may be able to displace black workers during periods of layoff. In short, any rearrangement of promotion systems will result in an extraordinarily complex redistribution of benefits, expectations, and preferences for internal mobility among both white and black workers which is difficult to anticipate in advance.

Employer Costs

As noted earlier, remedies for discriminatory promotion systems almost always involve additional costs for employers as well as employees. These employer costs include increases in the average amount of on-the-job training which must be provided when filling internal vacancies, concomitant changes in the costs of other instruments of adjustment, and reduced productivity as a result of morale problems which may accompany changes in employee expectations. These costs will vary systematically with the type of internal market structure and the type of remedy introduced.

When racial segregation takes the form of identical mobility clusters, or of clusters in which the less skilled jobs in a skill progression sequence are separated from the more skilled jobs (as in Figures I and II), merging the mobility clusters will permit black workers in the lower skilled jobs to transfer some of their training to higher skilled jobs in the sequence. In some cases this may reduce training costs, but it may also be accompanied by an increase in the hiring standards on the least skilled entry jobs, thereby raising recruiting costs. Similar considerations may apply when blacks have been temporarily assigned to the lower skilled jobs in the white mobility clusters, regardless of skill progressions.

As skill relationships among segregated mobility clusters diminish (as in Figure II) the training costs of merging mobility clusters increase. Remedies based upon broadening mobility clusters will permit internal mobility which may bear little relationship to training sequences. In the extreme case, instituting plant-wide mobility clusters may completely disrupt on-the-job training sequences, and training costs will approach levels which would arise if each job were an entry port. Where training sequences involve many job steps and skills are dissimilar among the sequences, broadening mobility clusters will involve considerable retraining costs as employees shuttle between training sequences. When the job structure is relatively "flat," however, and skills in various clusters are similar, retraining costs will be relatively low.

Furthermore, since much of on-the-job training is "automatic," training efficiencies are often a function of the length of time a worker occupies a particular job classification. Stability of employment will therefore also affect the costs of merging mobility clusters. The greater the rate of internal movement, caused either by employment expansion or by instability in demand, the higher will be training and retraining costs. The rate of change of employment is also important to the costs to white employees of various types of remedies. Even the extreme remedy of having black employees displace incumbent white employees, the "freedom now" approach, would have little impact upon the employment expectations of white employees if employment were expanding very rapidly. On the other hand, the impact upon the expectations and economic conditions of white employees would be very great if employment were contracting.

Accomodating Conflicts

In many cases, there is a trade-off between the costs to the employer and the costs to the incumbent work force of remedial changes in promotion systems. This trade-off can be exploited to facilitate the remedial process whenever one party is more willing than the other to incur additional costs. For example, if the wage rates paid in black and white promotion districts overlap, blacks may be reluctant to transfer into previously white districts whenever a reduction in wages results, especially if they do not retain their previously accumulated rights to job security. This problem can sometimes be resolved if the wage rates of transferring workers are "red-circled"--that is maintained at their present levels until a comparable rate is attained in the promotion district into which they are transferring.

If remedies are devised which involve additional training costs, or other non-wage labor force adjustment costs incurred by the employer, it becomes possible to utilize various government manpower programs in the remedial process. Thus, an appropriately chosen remedy could conceivably shift most of the costs of the remedy from the incumbent work force and the employer to the government. Such a shift is not consistent with the philosophy of current equal employment opportunity regulations which see the costs of eliminating discrimination in the internal market as solely a private matter. Nevertheless, some manpower programs appear already to be used for this purpose and it may not be inappropriate to extend this practice further.[1] Since Congress appeared not to have appreciated the magnitude of remedy costs in drafting Title VII, the absence of any endorsement of such subsidy arrangements cannot be said to resolve the question. Moreover, it can be argued that racial discrimination in employment is clearly a social, and not a private, problem and therefore the costs of remedying it should be borne by the society, as a whole, through manpower programs and other subsidy arrangements.

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[1] See Peter B. Doeringer and Michael J. Piore "Equal Employment Opportunity in Boston," Industrial Relations, May 1970, and Peter B. Doeringer (Ed.), Programs to Employ the Disadvantaged, Prentice Hall Englewood Cliffs, N.J. 1969.

3. Remedying Wage Discrimination

Wage discrimination which is rooted in the operation of an external labor market divided by race cannot be readily eliminated through the enforcement of fair employment legislation alone. It will disappear only if such policies are combined with improvements in education and training of blacks.

Wage discrimination occurring through distortions in internal job evaluation, however, can be more readily identified and corrected. There are three types of internal wage discrimination of this sort. First are cases where wage discrimination is solely a product of discriminatory hiring and assignment practices. In other words, where the internal wage structure is "fair" in terms of job evaluation practices, but where blacks are confined to lower wage jobs. Remedies in these cases should focus upon changes in hiring and promotion patterns rather than in the underlying wage structure. In practice, cases of this type are not common. The internal wage structure is usually dictated, in part, by considerations of internal labor allocation, and wage structures in enterprises with discriminatory promotion systems are liekly to require a different set of allocative inducements from enterprises where promotion discrimination is not present. Moreover, when revisions are made in promotion and hiring patterns to eliminate discrimination, concomitant revisions in the wage structure may also be necessary. It does little good, for example, to open new promotion opportunities to black workers without providing a wage structure consistent with movement into these opportunities.

A second type of internal wage discrimination involves situations in which an existing job evaluation plan for white jobs has never been applied to black jobs. The remedy here is simply to apply the existing plan to the black jobs. In plants which do not employ formal job evaluation plans, there may either be an informal set of evaluation standards which can be applied to black jobs or else a formal plan can be imputed from the existing white wage structure and applied to black jobs in much the same fashion as the steel industry job evaluation plan was developed following World War II.[1]

Finally, there is internal wage discrimination in which the same evaluation procedures are applied to both black and white classifications, but where the weights given to factors which predominate on black jobs are especially low. This type of discrimination is extremely difficult to detect and to remedy. In some cases, it may be possible to find a similarly situated enterprise where discrimination has not been practiced and its wage structure could serve as a benchmark for fashioning a remedy.

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[1] See Stieber, op. cit.

4. Impediments to Remedies

Training Problems and Worker Sabotage

Training procedures have not been an explicit instrument of discrimination in the past, but they provide a potent means for frustrating remedies and for perpetuating discrimination. The critical nature of training derives from two factors, the relationship between promotion and training sequences and the importance of on-the-job training. Because many internal mobility patterns presuppose that a worker has learned many aspects of a job before he is actually assigned to it, a failure to have acquired the training or ability to perform the job may serve as a bar to mobility, even where promotion sequences are formally defined. Since most on-the-job training requires the acquiescence of the incumbent work force, white workers may seek to conceal their skills from black workers as a device for preventing or delaying the promotion of black workers, thereby denying them access to job opportunities resulting from remedial changes in mobility clusters.

This implies that an effective remedy must ensure that either the employer or the incumbent white employees have responsibility for seeing that training occurs. Establishing this responsibility may require the creation of formal training programs as substitutes for on-the-job training, the systematic utilization of the less prejudiced white employees in on-the-job training, or the discharge of white employees who refuse to cooperate with the on-the-job training process. Again these remedies are costly and require a balancing of competing interests within the enterprise, but as noted above, the availability of government subsidies for training may permit some of these costs to be shifted to the society at large.

The attempt by workers to sabotage remedies by not cooperating with on-the-job training is only one aspect of the broader problem of worker sabotage. Worker resistance can be expressed through much more dramatic means such as slow downs, strikes, and machine damage. Such sabotage is symptomatic of the fact that racial discrimination becomes part of the customary law of the work place and attempts to change it invite sanctions from the work force. Thus, designing effective remedies to discrimination requires the discovery of arrangements for changing custom as well as for changing hiring, promotion, wage and training procedures.

In some instances this will require the creation of new customs which the internal work force can accept as equitable. One such arrangement might be to expand the criteria governing promotions to include "training potential," as well as ability and seniority.[1] This wider range of promotion criteria might help to divert the attention of the internal work force from immediate qualifications, and from acquired seniority, to a factor which is more neutral with respect to benefiting one group of employees over another.

A second approach is to expand employment opportunities so that the change in customs is accompanied by less of threat to the economic security of particular groups within the internal labor force. When racially discriminatory promotion systems occur in multi-plant enterprises, for example, it might be possible for corporate management to increase the available jobs in the plant by diverting additional production orders, cancelling sub-contracts, and even expanding funds for capital expansion, to those plants which are attempting to eliminate discrimination. Promotion opportunities could also be expanded by taking some desirable jobs which are normally filled from the external labor market, such as technical, clerical, and maintenance occupations, and fill them instead from the internal work force. Such arrangements, to be effective, would have to be accompanied by appropriate training programs.

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[1] See Challenges to Collective Bargaining, Final Report of the Thirtieth American Assembly,(New York: Columbia University Press,1966).

Where employment opportunities within the internal labor market cannot be expanded, programs might be developed to provide additional general education--basic English and mathematics, vocational skills for employees in the lower paying job classifications. This training could help them qualify for employment outside the confines of their particular internal labor market. Such manpower programs, directed at the external labor market, have succeeded in enterprises facing employment declines due to technological change, and can also be appropriate in a civil rights context.[1]

In changing customs, the various roles of unions should not be ignored. First, where the union has codified customary practices, it may be easier to identify the discriminatory rule and to write a remedial rule. Thus codification can both freeze in discriminatory practices and facilitate their change. Written procedures in non-union plants have similar effects. Second, unions may organize and focus employer pressure and, in this sense, may make it more difficult to change rules detrimental to the majority work force. Unions should, therefore, always be made a party to remedial arrangement even when they do not have direct responsibility for administering work rules.

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[1] See, for example, George P. Shultz and Arnold R. Weber, Strategies for the Displaced WorkerConfronting Economic Change, (New York: Harper and Row, 1966).

Finally, there may be changes in custom which neither unions nor managements can voluntarily accept, but which the internal labor force will find acceptable if imposed by a third party. Rulings by arbitrators in grievances, for example, permit new interpretations of contract language and past practice which can overturn discriminatory customs Similarly, the courts can introduce new work rules into internal labor markets which contradict old customs and establish new ones.

5. Guidelines and General Remedies

In fashioning remedies it should be clear that any remedy will have markedly different effects upon the parties depending upon the conditions present in the particular internal labor market. The pattern of employment growth, the configuration of the discriminatory promotion system, future trends in technological change, the seniority distribution of blacks and whites, the dispersion of wage rates in the internal wage structure, and so forth will all influence the final outcome of any designated remedy. These considerations illustrate the complexity of fashioning equitable remedies to promotion discrimination and argue against the view that a simple set of remedial principles can be universally applied. In effectuating the underlying spirit of equal employment opportunity regulations it would not be inconsistent to impose very different remedies from one case to another, indeed consistency may require such differences.

IV. Summary

In this chapter, the concept of the internal labor market has been applied to the analysis of racially discriminatory employment practices and to the development of remedies. A consideration of the factors generating internal labor markets suggests that some discrimination is best understood in terms of the costs to employers of screening, recruitment, and training whereas other forms of discrimination can be traced to attempts by white workers to enhance their job security and economic opportunity at the expense of black workers.

Title VII of the Civil Rights Act of 1964, regulations of the OFCC, and other equal employment opportunity regulations can best be understood as policy instruments designed to mandate changes in the rules which govern internal labor markets as opposed to manpower policies which seek to operate within existing internal market rules to enhance the competitive position of black workers. An understanding of the complex of factors generating internal labor markets, however, suggests that attempts to change discriminatory rules will come in conflict with a variety of other interests and social goals such as efficiency and the protection of job security. Congress, in passing Title VII, failed to appreciate the extent and nature of these conflicts and it falls to the Courts and to government agencies to resolve the conflicts or to effectuate a balance among them. The body of the chapter attempts to evaluate various discriminatory rules and procedures in this light.

In principle, racial discrimination can occur through any of the eleven instruments identified in Chapter V as governing the relationship between the internal market and the external labor force. In practice, racial discrimination appears to be effectuated primarily through hiring standards, screening procedures, recruitment procedures, internal allocative rules and the rules governing wage determination.

Racial discrimination is closely bound to the informality and flexibility of recruitment and hiring procedures. Increasing the formality and the rigidity of these procedures may be required to eliminate racial discrimination, but this is also likely to curtail the ability of the internal market to adapt efficiently to technological change and changing labor market conditions. Remedying discrimination in hiring is also complicated by the statistical nature of the screening process which makes it difficult to admit more qualified members of a given group without admitting more unqualified members of that group at the same time. Stressing these costs, however, is not to imply that they justify the status quo, only that they should be considered in fashioning remedies.

Promotion and wage setting procedures, at least in enterprise markets, are often more formal than recruitment and hiring procedures so that discrimination is more readily identified and remedies are easier to design. But, particularly with respect to promotion, the conflicts among the interests of various groups of workers and between worker and managerial interests are intense. To the extent the society seeks to effectuate some kind of balance among these interests no single set of remedial rules will suffice.

Finally, it is pointed out that, to a great extent, racially discriminatory practices are customary in nature and, because of the ability of the majority labor force to enforce custom, their complete elimination may require changes in custom itself. The chapter concludes with some suggestions as to how this might be accomplished.

The body of the chapter does not deal explicitly with trade unions, since much trade union activity must be understood in the context of social groups and customary law. Unions tend to strengthen custom by increasing the amount of group pressure that can be brought to bear in its behalf. They also change the way in which custom evolves over time by commiting it to writing. These effects have diverse results upon discriminatory employment practices some of which make such practices easier to change and some of which make them more resistent. On balance, given a legal progress for reviewing written work rules, the fact that the union commits customary rules to writing is probably of considerable help in eliminating discrimination.

CHAPTER VIII

LOW INCOME EMPLOYMENT AND THE DISADVANTAGED LABOR FORCE

The preceding chapters have concentrated primarily upon internal labor markets and the internal adjustment processes within medium and large size enterprises. These enterprises belong to the most stable and administratively well organized segment of the economy. The better educated and skilled workers customarily find employment in such markets. There are, however, a group of low wage, and often marginal, enterprises and a set of casual, unstructured work opportunities where workers with employment disadvantages tend to find work.[1] The labor market adjustment process for this low wage employment and its effect upon the disadvantaged is only poorly understood. But the available evidence suggests that it is less well developed, less effective and perhaps more detrimental to the work habits of the labor force than the adjustment process in the primary labor market. The operation of the low wage labor market will be examined in this chapter. In Section I, the characteristics of this market are described, Sections II and III present federal theories of low income labor market behavior, and conclusions for policy are offered in Section IV.

I. The Characteristics of Low Wage Markets

It is, by now, well established that disadvantaged workers in our central cities have lower educational attainment, higher unemployment, more part time work and less work experience than the average American worker.[1] Moreover, an increasing proportion of the central city labor force is black and receives income from welfare or illicit activities.[2] Various studies have attributed disparities between white and non-white labor-market experience to differences in education, place of residence, labor force participation rates, and discrimination. They have also shown that the income, employment, and unemployment of non-whites are more sensitive to economic conditions than those of whites, but that substantial economic disadvantage remains for non-whites, even at high levels of aggregate demand.[3]

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[1] For a similar distinction with respect to enterprises see Robert T. Averitt, The Dual Economy, W. W. Norton and Company, Inc., New York, 1968.

In many cities it appears that these employment and income problems do not reflect absolute barriers to employment so much as a deficiency of high wage or otherwise preferred employment opportunities. For example, a study of the low wage labor market in Boston showed that employment in hospitals, hotels, warehouses, building maintenance services, industrial sweatshops, and so forth, is readily available to the disadvantaged.[4] But attractive high wage employment--jobs which constitute, in the current language of manpower programs, "meaningful employment opportunities"--were much less accessible.

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[1] See, for example, The Report of the National Advisory Commission on Civil Disorders, (Washington, D.C.: Government Printing Office, 1968), Ch. 6-7

[2] Ibid.

[3] See Gilman, op. cit, and Thurow, op. cit.

[4] See Peter B Doeringer, et al, Low Income Labor Markets and Urban Manpower Programs: A Critical Assessment, Report Submitted to the Manpower Administration, U S Department of Labor, January 1969. For example, a sample of persons seeking employment through ABCD, Boston's community action agency, between September 1966

II. Theories of the Low Income Labor Market

There are several conceptual approaches which can be adopted for analyzing the behavior of low income labor markets. Although the policy implications of these theories share much in common, the emphasis and the range of the policies are somewhat distinct. Two concepts: the queue theory and the dual labor market theory are presented in this section.

1. The Queue Theory

Stated in its simplest form, the queue theory asserts that workers are ranked according to the relationship between their potential productivity and their wage rates. Given wage and job structures which are rigid, at least in the short run, this theory holds that employers ration workers among the available jobs according to their preferences for workers. The most preferred workers are selected from the queue first, leaving the less preferred workers to find work in the least desirable jobs on the fringes of the economy or to remain unemployed. Thus the number and the characteristics of the employed are determined by total labor demand, the wage structure of the economy, and relative

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and April 1968, showed that 70% of those referred to work were offered employment. Moreover, those who were offered jobs had similar socio-economic characteristics to those who were not offered jobs. The employment histories of the workers sampled also suggest that obtaining low wage employment was not a problem.

National data on non-white employment and data gathered in the Department of Labor's Urban Employment Surveys in 1966 are consistent with this view. Both show high rates of short-term unemployment relative to long-run unemployment.

worker productivities. By definition, therefore, the disadvantaged are located at the rear of the labor queue and have limited access to the most preferred employment opportunities.

According to the postulates of the queue theory, expanding employment should encourage employers to reduce their hiring standards, to recruit from the disadvantaged labor force, and to provide additional training to raise the productivity of the disadvantaged. These predictions of the queuing process at the enterprise level is supported by the analysis presented in Chapters III-V. Further evidence is also provided by aggregate studies of the economy to absorb and upgrade nonwhite workers during the 1960's.[1]

2. The Dual Labor Market Theory[2]

This theory argues that the labor market ought to be conceived as divided into two parts: a primary and a secondary market. Jobs in the primary market possess several of the following characteristics: high wages, good working conditions, employment stability, chances of advancement, and equity and due process in the administration of work rules. Jobs in the secondary market, in contrast, tend to have low wages and fringe benefits, poor working conditions, high labor turnover, little chance of advancement, and often arbitrary and capricious supervision. There are distinctions between workers in the two sectors which parallel those between jobs: workers in the secondary sector tend, relative to those in the primary sector, to exhibit greater turnover, higher rates of lateness and absenteeism, to be insubordinate more often, and to engage more freely in petty theft and pilferage.

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[1] See Thurow, op. cit.

[2] This theory is developed in Michael J. Piore, "On-the-Job Training in a Dual Labor Market," in Arnold R. Weber et al, Public-Private Manpower Policy (Industrial Relations Research Association, Madison, 1969); "Public and Private Responsibilities in On-the-Job Training of Disadvantaged Workers," Department of Economics Working Paper No. 23, MIT, June, 1968 and "Manpower Policy," in Samuel Beer et al, The State and the Poor (Winthrop Publishing Company, Boston, 1970), pp. 53-83.

Disadvantaged workers, the theory asserts, are confined to the secondary market by factors such as residential location, inadequate skills, poor work histories, and discrimination. Although the interconnections between primary and secondary labor markets are seen as either weak or non-existant on the supply side, primary employers, through devices such as subcontracting the temporary employment, can convert primary employment into secondary employment. The central goal of public policy is to overcome the barriers which confine the disadvantaged to this market and to obtain access to primary jobs for them.

The high rates of unemployment found in poverty neighborhoods and upon which the queue theory focuses are viewed in the dual market theory as frictional, reflective of the relatively high rates of labor turnover in the secondary market. Both comments of employers and workers are indicative of this instability. Employers complain of lateness, absenteeism and turnover among workers. Workers are especially bitter about arbitrary management, low wages, and job insecurity. As these comments suggest, the instability appears to be a characteristic of both jobs and workers. Certain of the jobs available to the disadvantaged--jobs in hospitals and hotels, for example--although menial and low-paying are stable, but turnover among the employees who hold them is relatively high. Other jobs--in non-union construction, seasonal manufacturing and the like--are very unstable and are not organized to provide continuous employment. Whatever its cause, however, the amount of job changing which occurs means that any given level of employment in the secondary sector is associated with a much higher level of frictional unemployment than in the primary sector. In a sense, therefore, high levels of turnover and frictional unemployment may be taken as the salient characteristic of the secondary market.

To a certain extent, the terms primary and secondary are poorly chosen. They are conventionally associated with the literature on labor force participation in which the term "secondary" is applied to workers such as women and teenagers, who are thought to have a relatively weak attachement to the labor market.[1.] But the association with labor force participation which the terms carry is not altogether misleading. "Secondary" workers in the labor force participation literature, because their labor force attachment is low, exhibit high turnover as is characteristic of the secondary labor market. Moreover, because their job attachment is low, they are not interested in chances of advancement and are more tolerant of an unattractive work environment. Thus they tend to be employed in jobs which share many of the characteristics of those available to disadvantaged workers. This parallel is instructive. It suggests that it is not the existence of secondary

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[1] See, for example, Jacob Mincer, "Labor Force Participation and Unemployment: A Review of the Literature," in Robert A, Gordon and Margaret S Gordon (eds.), Prosperity and Unemployment, (New York:Wiley, 1966).

employment per se that constitutes the policy problem. It may be quite appropriate for workers for whom the job itself is a secondary aspect of their lives, whose income requirements are limited, (as in the case of teenagers without families), or who foresee eventual access to primary employment. It is the permanent and involuntary confinement in the secondary market of workers with major family responsibilities that poses the problem of public policy.

To the extent that the problems of the disadvantaged are characterized by a dual labor market, policy must concern itself not only with the number of jobs relative to the number of workers, but their distribution between the primary and the secondary sector.

3. Primary Markets and Internal Labor Markets

The queue theory and the dual market theory may be reconciled by emphasizing the association between the primary sector and internal labor markets. The primary sector consists of a series of internal markets of the kind upon which the analysis of the present volume focuses. The process of entry into these "primary" internal markets appears to operate like an employment queue. Prospective employees are ranged in some order related to their productivity and employers hire along the queue until they have filled their hiring requirements.

In contrast, the secondary labor market consists of three kinds of employment situations. First, some secondary employment is completely unstructured, not belonging to any internal market. Such jobs are the polar opposite of those internal labor markets and resemble the jobs postulated in competitive theory. Examples are casual laboring jobs in construction, domestic work, and dishwashers in restaurants. Second, other jobs lie in what might be called "secondary" internal labor markets. These markets do possess formal internal structures, but they tend to have many entry ports, short mobility clusters, and the work is generally low paying, unpleasant or both. Typical of such markets are blue collar jobs in foundries, stitching and pressing jobs in apparel plants, and menial jobs in hospitals.

Finally, secondary jobs having few, if any steps of promotion or transfer rights are occasionally found attached to internal labor markets in which the remainder of jobs are primary. In manufacturing establishments there may be one seniority district composed of such secondary jobs and entry standards for these jobs are considerably less stringent than for other districts in the plant. In pulp and paper mills, for example, there is the wood yard; in some machine tool companies there are foundry and laboring districts; in light manufacturing there are often temporary packaging lines. Secondary jobs in internal labor markets closely resemble the other two types of secondary jobs described above. Similar enterprises may man these same jobs on a casual basis, without providing incumbent employees any of the privileges of the internal labor market. Other enterprises may sub-contract the same work to "secondary" internal labor markets. To the extent that secondary jobs in "primary" internal labor markets are governed by seniority, formal grievance procedures, job evaluation plans, and so forth, this appears to be more the product of the need for consistent internal administrative practices than the result of compelling economic and social forces.

It is characteristic of all three types of secondary employments that the forces promoting internal labor markets appear to be weaker than is the case for primary employment. Entry into secondary employment is less characterized by a queueing process than it is in primary employment. Many employers do not appear to draw distinctions between one secondary worker and another other than on the basis of sex or physical strength, and seem as if to be hiring from an undifferentiated labor pool.[1] Since turnover is high and the right to discharge relatively unrestricted, more careful pre-employment screening is not generally warranted.[2]

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[1] Analysis of both population and establishment data collected in Boston have failed to explain, through quantifiable socio-economic variables, much of the variance in hiring decisions with respect to the disadvantaged. Discussions with employers indicate that this is partially explained by the importance of interviews in measuring less tangible worker qualities. In addition, it appears that fine distinctions are not drawn among workers in the secondary labor market because differentiating degrees of disadvantage is difficult, labor needs are more pressing, and pre-employment screening is less important in secondary internal labor markets.

[2] According to one interpretation, the secondary labor market, and to some degree, labor markets in general can be understood more clearly in terms of two queues--a hiring queue and a job vacancy queue. The hiring queue consists of strata of workers defined by quantifiable variables such as education, age and test scores, and by subjective information obtained during interviews. The job vacancy queue consists of entry positions ranked informally by workers' evaluations of wages, promotion opportunities, employment security and working conditions. The precision of ranking along these queues follows a gradient, being well defined in the primary labor market and tapering off into imprecise ranking in the secondary labor market. Once an employment relationship has been established a second screening operation occurs on the job as employers and workers appraise one another under actual working conditions. If either party is considered to be unsatisfactory by the other during the probationary period of employment, the employment relationship is terminated through quits or discharges and the labor market adjustment process operates upon the new vacancy. (See Peter B. Doeringer, "Manpower Programs for Ghetto Labor Markets," *Proceedings of the 21st Annual Winter Meeting of the Industrial Relations Research Association*, December 1968).

For some disadvantaged workers, movement between the secondary and the primary sector may be described as a queue phenomenon comparable to that through which workers enter internal labor markets in the primary sector. When the labor market is loose, many workers in the secondary sector stand at the end of the queue for employment in primary internal labor markets. As the market tightens, primary employers are forced to move down this queue and eventually reach those at the back. However, other workers in the secondary sector, the most seriously disadvantaged, may not be included in the queue for entry to primary employment at all. If primary employees reach the end of the queue and refuse to expand employment futher by hiring the most seriously disadvantaged other instruments of adjustment to market conditions such as subcontracting, technological change and the like may be utilized instead. Some of these instruments, such as subcontracting and the use of "temporary" workers, may then serve to shift the expanding employment opportunities from the primary to the secondary sector.

This view of the labor market which associates primary employment with internal labor markets and secondary labor markets with a mixture of internal markets and jobs not belonging to internal markets suggests that the distinction between primary and secondary markets need not imply the strict separation of the two markets embodied in the concept of a dual labor market. Whether dichotomous or a continuous model of the labor market is appropriate is a matter of both emphasis and empirical judgment. Data from Boston, and broader labor force surveys as well, show that primary and secondary jobs clearly exist in the economy at any point in time and that many disadvantaged workers remain employed in the secondary labor market for long periods.[1] If the labor market mechanisms--as altered by economic growth, education and manpower programs, and pressures for equal employment opportunity--work over time so as to expand the relative importance of primary employment and to encourage patterns of labor mobility in which disadvantaged workers can readily move into primary jobs, then a theory stressing labor market continuity is most suitable. On the other hand, if the proportion of secondary jobs is large and growing, or if forces are at work which increase barriers to mobility between secondary and primary employment, then a dichotomous theory of the labor market will be most useful.

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[1] See Doeringer et al, *Low Income Labor Markets and Urban Manpower Programs: A Critical Assessment*, *op. cit.*; and Peter M. Blau and Otis D. Duncan, *The American Occupational Structure*, (New York: Wiley, 1967).

III. The Determinants of the Secondary Labor Market

A number of factors operate to distinguish the secondary labor market from the primary labor market. These factors are interrelated and tend to interact with each other in complex ways, making it difficult to analyze each factor separately without doing violence to the simultaneous nature of the processes at work. For example, the characteristics of the secondary labor market most closely related to each other are the relative instability of employment, the relative instability and the high unemployment rates of the work force, low wages and poor chances of advancement, the paucity of training opportunities, and the arbitrariness in the administration of work rules. It is possible, however, to understand these intereactions by starting with any one characteristic of the secondary market and demonstrating how the other market characteristics can be derived from it.

Employment in the secondary labor market fails to provide the kinds of job security, wages, and working conditions required to stabilize the work relationship. This may occur because employers in the secondary sector cannot economically establish internal labor market conditions which are conducive to reducing turnover or because the technical aspects of the jobs are such that the reduction of turnover has little value to the employer. Second, the attitude and demographic traits of the secondary labor force may be such that workers place little value upon job security in particular enterprises. These two explanations, while examined separately, are not independent. Unstable and undesirable jobs may encourage workers to place low value upon job security while a work force prone to turnover may make the costs of reducing turnover prohibitively high. In this section, the implications of the forces determining internal labor markets for the analysis of the secondary labor market are examined.

A. The Value of the Internal Labor Market to Secondary Employees

There are groups of workers in the labor force whose economic position or phase in the life cycle leads them to place little value upon permanent employment and chances of advancement. Such is the case with certain working mothers who are preoccupied with their families and whose earnings are used as a supplement to the basic wage of the man who heads the household. Many such women expect to quit their jobs to have more children, or when they have accumulated enough funds to finance certain household durables. Moreover, they often seek jobs which will tolerate lateness or absenteeism caused by family emergencies. Another group of workers seeking similar employment are students, whose major activity is school attendence and who seek part time work to supplement family allowance or school stipend. Some of these youths, in fact, may only be looking for short duration work during summers, holidays, or simply for a couple of weeks during the term to finance a "heavy weekend." Still another group of workers with slight interest in security or advancement are moonlighters whose major concern is with the characteristics of their main job and who expect only short tenure in this secondary employment.

Finally, whenever one job can be readily replaced with another job yielding similar rewards, workers generally tend to place less value on job security in particular internal markets and to derive job security from the external labor market.[1] While a portion of the instability which characterizes the secondary labor force can be understood on the basis of demographic characteristics, other factors --the instability of jobs, the influence of "street life," discrimination, and the like--operate on both the supply and demand sides of the labor market to weaken internal labor markets and to foster the secondary labor market.

B. The Value of Internal Labor Markets to Secondary Employers

The Effect of an Unstable Work Force

If it is assumed initially that the secondary labor market is attributable to worker characteristics, that is that workers can be divided into two groups, a group of stable workers and an unstable group who tend to have high rates of absenteeism and frequently arrive late for work, employers can respond to that labor supply in a variety of ways. Employers lucky enough to have the stable workers can simply hire a number of workers equal to the number of work stations. If employers do not differ in their needs for a stable labor force and if the employers must compete with each other in the product market, then enterprises which hire unstable workers will have to make a series of adjustments to operate effectively. Two kinds of adjustment are possible. The company can institute a "shape-up" hiring each day from a gang of workers appearing at the gate, a number equal to the number of its work stations. Under this arrangement, productivity per employee will be the same as that in the stable market, and the firm can afford to pay the same daily wage, provided that the gang is always large enough to fill all available jobs. Because workers are unstable, however, the gang is likely to vary in size from day to day. The guarantee against job vacancies provided elsewhere by worker stability can only be obtained, therefore, if even on the worst day the shape-up gang is at least as large as the number of jobs. This, in turn, implies that on most days the gang must be larger than the number of jobs, and unemployment among unstable workers will exceed that among stable workers.

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[1] This is thought to explain why job rates rise with employment expansion. See Wages and Labour Mobility, (Paris: Organization for Economic Cooperation and Development, 1965); and Alan K. Severn, "Upward Labor Mobility: Opportunity or Incentive?" Quarterly Journal of Economics, vol. LXXXII, no.1, February 1968, pp.147-151.

The alternative to a "shape-up" policy is "overmanning," insuring that all work stations are covered, despite absenteeism and turnover, by maintaining a labor force substantially larger than the number of work stations. Complete insurance, however, requires that, on the average, there will be idle employees present. Thus, while productivity per work station is equivalent to that in firms hiring stable workers, productivity per employee is lower, and to induce firms to hire unstable workers the lower productivity must be compensated by lower wages.

In practice, firms hiring unstable workers will probably tend to pursue a combination of the "shape-up" and "overmanning" policies. Thus, the market with unstable workers will tend to be accompanied by both low wages and higher levels of unemployment.

The other characteristics of the secondary market can also be explained by employee instability. Because the labor force is unstable, the employer has no incentive to invest in training on-the-job. Indeed, he could not recoup the returns to such investment. Lacking an interest in on-the-job training, the employer is also less interested in building lines of progression which might facilitate such training or capture the training which occurs automatically. The absence of lines of progression reduces promotion opportunities within the enterprise. Indeed, given high turnover and the consequent difficulty of internal training, the employer has an incentive to minimize the skill involved in the work, utilizing as "unskilled" a technology as he can, and this further reduces training opportunities. Finally, to the extent that the labor force is unstable and turnover is high, cohesive work groups do not develop: custom is, therefore, weak, the work rules tend to be ambiguous, and there is little pressure from the labor force for a fair and equitable administration.

The Effect of Unstable Jobs

The preceding has been developed on the assumption that it is workers who are more or less unstable, but that jobs all possess the same degree of stability. Clearly, that is not the case. Removing this assumption and attributing all or part of the instability in the secondary labor market to the nature of jobs does not basically change the characteristics associated with it. Unstable work will continue to be found among jobs which, relative to stable employments, involve little training, small chance of advancement, higher rates of unemployment, and less equitable work rule administration. Among the secondary employers who can be understood in this way are highly seasonal industries with short employment periods like construction, or industries where demand is generally temporary. In other industries, the job itself may be stable, but the nature of the industry may make turnover relatively inexpensive. Thus it may be possible to understand the secondary character of menial jobs in hospitals by the fact that these jobs are themselves unskilled and the industry is prevented by licensing requirements and professional attitudes from utilizing any learning which occurs on the job to upgrade low skilled employees to higher level occupations. Thus, either inherently unstable employment or lack of training costs will discourage employers from instituting internal labor structures which will serve to reduce turnover.

C. Supplementary Influences Upon the Secondary Market

1. The Impact of Collective Bargaining and Trade Union Organization

While, to a certain extent, the development of internal labor markets may be understood as a free response of employers to the advantages which the internal market provides them, they have in many cases been forced by union pressure to provide greater job security than is otherwise to their advantage. For example, in industries where the labor force has traditionally borne heavy costs of cyclical and seasonal variability in product demand or of labor-saving technological change, rules have been introduced which considerably limit these costs. Some of these rules--seniority provisions, limitations on layoffs, emphasis upon promotion from within and union control over jobs--directly created the internal labor market. Others--guaranteed annual wages, formalized work sharing arrangements, grievance procedures to limit arbitrary discharges, supplemental unemployment benefits and termination pay, pension plans and so forth--have substantially increased the attractiveness of jobs within internal markets.

A side effect of this trend, however, has been the encouragement of some types of secondary employment, such as temporary employment, as a means of providing manning flexibility in the primary enterprise. The costs of economic instability in primary labor markets are therefore transferred to temporary jobs and to smaller non-union internal labor markets such as job shops, which produce for the residual product market left by the larger enterprises.[1]

Numberous examples of this process can be found. In the cyclical industries, such as steel and autos, strong seniority systems have reinforced natural training ladders and income guarantees have stabilized both income and employment. Small job and specialty shops bear the brunt of the cyclical instability in these industries. In longshoring, employment guarantees, decasualization of work, and automation funds have been the culmination of this process. In some East coast ports, decasualization has been associated with the formal recognition of a permanent pool of casual workers with little or no attachment to the industry and only residual employment rights. In major non-union companies such as IBM and Polaroid, employer initiative has carried this logic further by providing virtual guarantees of employment to all incumbent workers.

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[1] See J Kenneth Galbraith, The New Industrial State (Boston: Houghton Mifflin Co., 1967), and Averitt, op. cit.

Grievance procedures and fringe benefits have a similar influence. Any limitation on the employer's use of layoffs or discharges to achieve efficient manning levels creates incentives to stabilize employment and a preference for stable employees. Fringe benefits such as paid vacations and holidays, severance pay, and health and retirement plans that link employer contributions to the size of the labor force as well as to hours worked or wages paid, all discourage primary employers from adapting to absenteeism and turnover by overmanning. The replacement of piece rates by day rates has also operated to raise the costs of turnover while increasing the incentives which encourage worker stability.

The extent of labor organization, and the concomitant influence of unions on unorganized internal labor markets, is largely determined by the size and stability of the internal labor market. Where internal labor markets are small or employment unstable, the costs of labor organization, and of maintaining organizational strength, are high relative to the membership obtained. Rather than attempting to organize the entire product market, unions frequently tolerate a small segment of enterprises paying below union standards. An illustration of this is the residential housing sector which is typically non-union. These are often secondary employers whose output is too small, or whose efficiency is too low, to jeopardize the union rate. Thus, the distinction between employment directly or indirectly influenced by union activity, and that which is not.

2. The Impact of Labor Legislation Upon Secondary Employment

The extent of union organization is influenced by the coverage of the Wagner and Taft-Hartley Acts and by NLRB decisions limiting its own jurisdiction. Enterprises that are formally or informally exempt from these laws--non-profit hospitals, agriculture, domestic service, and many small establishments--are all part of the secondary labor market. Because of the instability and elasticity of the supply of labor to these enterprises, the absence of NLRB machinery has probably been a more significant obstacle to collective bargaining in the secondary labor market than it would be in the primary labor market.

The exemptions from the Wagner and Taft-Hartley Acts are symptomatic of broader principles underlying the relationship of federal labor law to the secondary labor market. For example, unemployment compensation, social security, and minimum wage legislation all exempt parts of the secondary labor market from coverage.

Federal social welfare legislation affects employment stability in a manner similar to that of union contract provisions. The most prominent effects are produced by the ceilings on the tax base of the social security programs and by the experience rating formulae for unemployment insurance. Where annual earnings of full time workers exceed the taxable income ceiling, or when an employer can obtain a beneficial experience rate, the employer has an incentive to minimize the number of people on his payroll and to avoid turnover which would raise the total number of workers employed during the year. Employers who are exempt from the coverage of these regulations, who pay annual salaries below the income ceiling, or who have reached the maximum tax rate for unemployment or workmen's compensation insurance face no such incentives for stabilizing employment. More generally, any provision raising employment cost per employee, whether it be recruitment and training costs, private welfare arrangements, or social insurance taxes, will tend to encourage stability of employment by raising the costs to the employer of turnover.

3. "On-The-Job" Learning in the Secondary Sector

While only low levels of "job skills" are developed in secondary employment, certain modes of behavior and thought are encouraged by such employment. Since this behavior is rewarded in much the same way that conventional skills are rewarded in other work environments, they can become habitual. They are, in other words, "learned." When they are antagonistic to employment in the primary sector, they must be "unlearned" if the worker is to successfully transfer out of the secondary market. Thus, for example, the very fact that so many secondary jobs accept lateness or absenteeism and adapt to it, tends to encourage unstable, erratic job attachment among workers who hold these jobs. Similarly, some secondary employers anticipate that their employees will steal. Rather than attempting to prevent this pilferage, employers accept the fact that it occurs, turn their backs, and adjust wages downward accordingly. Where supervision is often harsh and abusive and there is no institutionalized process for resolving grievances encourages employees to relate to their supervisors in a manner that in primary jobs would be considered insubordinate. Or again, employers expecting workers to be unskilled, purchase either very durable or cheap, second hand machinery and accept the abusive treatment which it receives in the hands of employees. As a result, the workers who use it become accustomed to treating machinery in this way and can neither understand or accept the greater respect accorded tools and equipment in primary employments.

To some extent, all workers in the secondary sector "learn" behavioral traits of this kind through employment there. In this sense, the "disadvantaged" workers involuntarily confined to such jobs may not be very different from the student, the working mother, or the moonlighter in the same job. However, these nondisadvantaged secondary workers tend to inhabit other environments which foster different behavioral traits and, in so doing, weaken the habits which develop at work. For a great many disadvantaged workers, on the other hand, , the habits which are fostered at the work place are also fostered in the home and social environments as well.[1]

4. Low Income Life Styles

Leisure time in low income neighborhoods is frequently dominated by street-corner life, a life style widely prevalent among low income people in general and in the black ghettos in particular. For the individual attached to the street, status and position in the world are defined by his group. His life has reality only in a group context, divorced from the group he is lonely and lost. The goal of group life is constant excitement. Its behavior is episodic; an endless period of "hanging around," punctuated by short adventures undertaken by the group as a whole or by individuals. Life thus tends to be immediate and sensational; past adventures are continually recalled and the future is not anticipated.

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[1] See Herbert Gans, The Urban Villagers: Group and Class in the Life of Italian-Americans (New York: Free Press of Glencoe, 1962); Elliot Liebow, Tally's Corner: A Study of Negro Streetcorner Men (Boston: Little, Brown and Company, 1967); Claude Brown, Man-Child in the Promised Land (New York: The Macmillan Company, 1965); and Malcolm X, Autobiography (New York: Grove Press, 1964).

Although cause and effect are again difficult to isolate, the episodic street life and the episodic pattern of work are obviously compatible. Just as the disadvantaged worker relies upon the secondary labor market, rather than particular employers, for employment security, he relies upon the street rather than the work place for social satisfactions. Secondary employment lacks the organized social life found in many primary establishments: athletic teams, dances, picnics, and even cafeterias. More important, the constant turnover of the internal labor force is secondary employment precludes the formation of stable friendships at the work place. Where work is not inherently satisfying, and where there are no compensating social satisfactions, the tie to the street group is more stable in his attachment to a particular work group.[1]

The allegiance of the disadvantaged worker to the street group is further heightened by the income generating activities undertaken within it. Hustling and illicit activities are a favored activity on the street. They are short run and episodic in nature and their very illegitimacy heightens the sense of adventure which is sought by the group.

The secondary labor market is well attuned to street life in a way which primary employment is not. Its limited demands upon the individual permit continued participation in the street group, when work schedules interfere with group activity the individual simply skips work. Petty thefts and work disputes become stories of bravado when retold. The piece rate payment system, found in some secondary jobs, permits the worker to choose his own work pace and, by adjusting compensation to productivity, helps to ensure that poor work habits do not unduly penalize the employer. Primary employment, in contrast, requires the individual to abandon street life and to conform to an ethical code which is not recognized on the street.

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[1] See Daniel Bell, The End of Ideology, (Glencoe, Ill.: Free Press, 1960).

Welfare also constitutes a component of the income generating process in low income neighborhoods. The payment structure of the welfare system discourages full time, low wage work. It is compatible with the secondary employment, and like hustling, is an alternative means of generating income. The public assistance system as presently structured, moreover, encourages people to work on the fringes of the labor market in jobs where earnings are not reported to official authorities. It involves a personal relationship with the social worker which is much closer to that between worker and supervisor in the secondary sector than the mere formal institutionalized relationship which prevails in primary employments.

5. Discrimination

Finally, in assessing the development of worker characteristics and their role in the generation of the secondary labor market, special mention should be made of discrimination. Discrimination, on the basis of race but also against low income people generally, works in two ways. First, to the extent that it leads to concentrations of low income people and their isolation from/ members of other social classes, it facilitates the development of a common set of behavioral traits and acts to perpetuate them. People are deprived of alternative behavioral models;

they have no chance of attaching themselves to friends and social settings which reward other traits; they find the same kinds of attitudes at home, at work, and at school, and fail even to develop the "skill" of adopting behavior as one moves from one context to another. In this sense, discrimination acts to hold workers in the secondary sector.

Discrimination can also operate to exclude or reject workers who do gain access to primary employment. Line supervision and other incumbent employees who serve as instructors on the job control the rate of learning of the new hire. Without the acceptance of his fellow workers the black employee may not learn his job and he may be the butt of sabotage or harrassment as well. Rejection and abuse from the work group can force the disadvantaged worker back to his street group, thus reinforcing the behavioral patterns which characterize workers holding secondary jobs.

IV. Linkages Between Primary and Secondary Market

1. The Queue Theory

The queue theory places heavy emphasis upon an expansion of aggregate demand as a solution to the problem of disadvantaged. Such an expansion will, under this theory, force employers to expand employment along the queue. Individual employers will draw workers both from the ranks of the unemployed and from lower wage jobs and, in the aggregate, this should result in both a reduction of unemployment and a deline in the proportion of low paying jobs.

The very high levels of aggregate demand which this theory implies would be necessary to move the poor into high paying employment appears, in the American economy, to produce inflation. The attempt to avoid this inflation leads to a second set of policies aimed at raising the productivity of the poor and, hence, shifting them forward in the employment queue. This is presumably the rationale, under the queue theory, for the array of manpower programs which were developed in the course of the 1960's.

Because the queue theory implies a certain degree of wage rigidity, it also suggests a third set of policies aimed at modifying the wage structure so that it would be profitable to employ the disadvantaged, even at their present level of productivity. This range of policies has not been attempted, although the reasons for this neglect are not obvious. The downward rigidity of wage rates would make it necessary to change the wage structure through upward adjustments. This would contribute to inflation, but not necessarily any more than an equivalent expansion of aggregate demand. The analysis of Chapter IV suggests that changes in the wage structure within a given internal labor market are exceedingly difficult to achieve, even through upward adjustments. It also indicates certain rigidities in the structure of wages between internal markets, but it implies little difficulty in changing the relative wages on low paying jobs which lie outside of internal markets.

2. The Secondary Labor Market

A recognition of the problem of secondary employment suggests a somewhat different approach to policy. It implies that expansion in aggregate demand will not necessarily solve the problem of the disadvantaged. In the extreme version of the dual labor market theory which postulates a complete dichotomy in the labor market, primary employment will stop expanding when it has absorbed the available primary labor force and further increases in output will be obtained by shifting demand into the secondary sector without any transfer of the secondary work force into the primary sector. Where some secondary workers occupy the queue leading to primary employment, expanding aggregate demand will help to alleviate the labor market of the disadvantaged. But more disadvantaged workers may be helped at a lower real cost if direct efforts are made to facilitate the movement of workers out of the secondary sector and if secondary jobs are converted into primary jobs.

For some workers, full employment and growth will be sufficient solutions to labor market disadvantage; for others, manpower and antidiscrimination market; for those that remain confined to secondary employment, the characteristics of secondary employment will need to be changed if labor market disadvantage is to be reduced. In the remainder of this section, two kinds of policies for the secondary sector are examined; those aimed at the labor force and designed to develop the worker traits required to retain primary employment, and those aimed at converting what are now secondary jobs into primary employment.

3. Changes in the Secondary Work Force

The central problem in changing the work force is that the secondary sector is the product of an interaction between workers and jobs. Jobs are adjusted by management to the traits of the labor force hired to perform them. But, at the same time, the characteristics of the work environment act to develop habits of behavior and thought among the members of the work force. Thus, if secondary workers are placed in primary jobs, they may gradually learn to attend regularly, show up to work on time, accept prohibitions on pilferage, utilize institutionalized channels for expressing grievances, and acquire the skills necessary to care for equipment. Or, the management may gradually adapt to the worker, accept absence and overman to cover it, begin to turn its back on pilferage and adjust wages and prices accordingly, let institutionalized grievance procedures atrophy, purchase second hand equipment, and the like. In fact, both changes will likely begin to take place; the end result will be dependent upon which adjusts faster, workers or jobs. The task of public policy is to slow the rate at which primary jobs adjust to secondary workers and increase the rate at which secondary workers adjust to primary jobs.

In analyzing this problem, it appears useful to rank disadvantaged workers in terms of the ease with which they are able to adapt to the primary work place. From a programatic point of view, this should be done on an individual basis. Even program administratives, however, claim to be unable to distinguish among individual applicants on this basis; tests and other simple screening devices are even less successful in doing so. It is, however, possible to define broad socio-demographic groupings of disadvantaged workers in terms of their adaptability to primary employment. The Boston study, summarized in the Appendix of this chapter, and the sociological literature on low income populations suggests a fivefold classification:

1. Teenagers with little or no previous work experience. Instability is most serious among urban born blacks within this group.
2. Persons with stable, but low wage work experience. This group consists primarily of adults. Black female workers are disproportionately represented in this group as are recent in-migrants from Latin America and the South.
3. Adults with a work history of chronic turnover and poor work habits.
4. Persons with clearly defined obstacles to employment, including the aged, mothers with young children, students seeking part-time work, alcoholics and addicts, illiterates, and the physically or mentally handicapped.
5. Persons not in the labor force who have sources of income, such as welfare and illicit activities, which are competitive with productive employment.

The group most likely to adjust quickly to primary employment are the adults with stable, but low wage work experience. A second group with potential for adapting to primary employment are youth just leaving their teens and beginning to marry and form families. In their teens, youth appear to be the most firmly attached to the street life of the slums. Indeed, that life style is characteristic not only of slum youth, but of many youth outside the slums as well. Most youth, however, make a transition to a more stable pattern of behavior as they mature and begin to marry and have children. A basic problem in the urban slums and ghettos appears to be the frequency, relative to other areas, with which this transition is aborted and adults slip back into adolescent patterns adapting it as their permanent life style. This suggests that the critical point in the work history of the slum labor force are the years of first marriage and family formation, and that the manpower policy may be most successful in aiding the movement from secondary to primary employment if it aims at this age group at the time when other forces are aiding the transition.[1]

Other groups require other types of assistance to facilitate their adjustment to the requirements of primary work. Some of these instruments are available in the existing manpower programs. For example, many in the second group need English language instruction and literacy training; those in the third group require special health and child care services. For people in the fifth group, the relevant policy, however, is fundamental changes in the structure of the public assistance system and in the definition of illicit activity and the environment is which that activity is conducted.

Reforms in the welfare system and in criminal laws are seldom considered manpower policies, but given the problem as defined here, they should be. The basic goal of these "manpower" policies would be to reward behavior and skills similar to those involved in legitimate employment so as to ease the transfer from the secondary to the primary sector. In the area of public assistance, this means a lessening of the penalties on earned income, a depersonalization of the system, and a separation of payments from services.[2]

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[1] See Gans, op. cit.

[2] See Michael J Piore, "Income Maintenance and Labor Market Entry: The FAP Proposal and the AFDC Experience", Proceedings of the Conference on New Labor Market Entrants, University of Indiana, 1970.

Finally, in considering policies aimed at facilitating movement into primary employment, special attention should be given to discrimination in schools, housing and employment. The dual labor market theory is most applicable to blacks in urban slums. These workers seem to be trapped in a world where all of the segments of their life reward a single set of behavioral traits and offer a single set of behavioral models. To attempt to change one component of that setting, therefore, by opening primary jobs may not be enough. Since other aspects of their life continually pull them back to secondary behavioral traits. The transition to primary employment becomes either impossible or so slow that the employer adapts to them before it is completed. The elimination of segregated housing, schools, and other basic dichotomies in the society may thus be critical to the elimination of the dichotomy in the labor market as it affects black workers.

4. Adjustments in Secondary Jobs

If a manpower strategy is adopted to free the disadvantaged from the secondary labor market, it is possible that other members of the labor force who finds secondary jobs particularly desirable--students, secondary earners with family obligations, and moonlighters will expand into the secondary sector. Moreover, to the extent that work in the secondary sector has been shifted there because the supply of primary workers is limited, it will shift back as that supply expands.

Nonetheless, policies aimed at converting secondary employments to primary employments do appear desirable on two counts.

First, it may be easier to convert the jobs to which the disadvantaged already have access than to open primary employment to them. Moreover, since the total volume of primary jobs and the concern with job security in such employment limits the number of employment opportunities available, an increase in primary jobs for the disadvantaged beyond some point will require conversion of secondary into primary employment. Second, as the disadvantaged gain access to primary employment, some displacement of workers who do, or would have had jobs in that sector, is bound to occur. Such displacement is generally undesirable because of the social tensions it creates. It is also undesirable because it may simply regenerate a new supply of secondary workers who acquire the traits of the secondary sector by working in it and associating with people adjusted to it.

A deliberate policy of converting secondary employments into primary jobs has not been pursued and hence, there is no direct evidence of relevance to this strategy. With determination and a good deal of imagination, however, it is probably possible to stabilize most secondary jobs and build into them the kind of career ladders, skill levels, and wage rates which characterize primary employment. Thus, for example, longshoring and unskilled construction work, which were secondary jobs par excellence have, since World War II, moved a considerable way toward decasualization. Similarly, in some cities, household and office cleaning firms have developed which use sophisticated equipment and a regular work force; these services substitute for female day workers once hired through the State Employment Service to help with temporary "Spring" cleaning.

While it may not be possible to make primary jobs of all secondary jobs, some jobs appear more susceptible to conversion than others. Among the more readily converted jobs are those in stable, low wage internal markets having formal internal structures but with many entry ports, short mobility clusters, and tolerating a good deal of "secondary" behavior on the part of the work force such as hospitals and hotels. Similarly, secondary jobs attached to primary internal labor markets, but without the job security, promotion opportunities, wage rates, fringe benefits and so forth of the primary internal labor market are also in this category.

Minimum wage legislation constitutes a direct means of influencing the compensation of jobs in the secondary labor market. Such legislation is normally an anathema to economists because of its potential contribution to unemployment and inflation. While the possibility of inflationary effects militates against the use of minimum wages as an aggressive policy towards the secondary labor market, the employment effects of such legislation may be exaggerated. If internal labor markets in the secondary sector customarily adapt to tight labor markets through higher job vacancy rates, as some labor market data suggest, then minimum wages may reduce overall demand for labor in the secondary market without contributing to unemployment. Should this analysis prove correct, raising the minimum wage may pose lesser conflicts with other goals of economic policy than is normally assumed to be the case. At a minimum, however, the level and coverage minimum wage should be uniform for all employment situations. Otherwise, it is clear that a disproportionate burden of labor force adjustment will be placed upon those jobs in the secondary labor market which are exempt from the full effects of the minimum wage.

Finally, in attempting to affect the character of these jobs, the most effective instruments may be indirect. The probable effects of labor legislation, of social security, and of unemployment compensation were noted earlier. These could be changed to eliminate those features which aggravate the primary-secondary distinction. It may be possible to develop new policy instruments deliberately designed to effect the characteristics of jobs: a tax on labor turnover, for example. Still another instrument which could be used is anti-discrimination legislation; skillfully applied, it might open up career paths out of what are now dead-end secondary jobs in enterprises that also contain more attractive primary employment.

V. Summary

The disadvantaged customarily find employment in the low income, secondary labor market. Work in low wage internal labor markets may be unstable, and therefore ideally suited to a casual labor force. Alternatively, such work may be low skilled, or organized so that the costs of worker instability are minimized. Even where such instability is costly, it may be less so than discovering and implementing corrective measures. In short, turnover and absenteeism are tolerated, and perhaps encouraged, in the secondary labor market.

In contrast, high wage, primary employers seek to avoid the costs of worker instability through selection procedures which exclude the disadvantaged, by internal market structures which encourage stability, and by compensation levels and industrial relations practices which promote worker satisfaction.

Two theories of the low income labor market were presented in this chapter, the queue theory and the dual labor market theory. The former stresses increased aggregate demand and manpower training programs as solutions to labor market disadvantage. The latter indicates the possibility of confinement to secondary jobs and the need for policies to eliminate confinement and to improve secondary employment. The data currently available does not uniquely support either a continuous or a discontinuous theory of the labor market. Nevertheless, it would seem that a unified labor market with linkages between primary and secondary employment is most likely to characterize the labor market behavior of the disadvantaged who are white. Despite recent occupational and income gains, however, racism and discrimination seem to be a continuing and unremitting problem in the society, making the dual labor market concept most appropriate for analyzing the employment problems of racial minorities.

Labor market disadvantage, while often summarized in terms of inadequacies in education and other socio-economic variables, is fundamentally a concept shaped by three factors: (1) the costs of adapting workers with various traits to the performance requirements of particular internal labor markets; (2) the influence of the secondary labor market, welfare, and illicit activities upon work habits; and (3) discrimination. In terms of the labor force adjustment process, low learning ability may be one problem, but tardiness, absenteeism, turnover, and motivation are certainly others. Discrimination, the quality of work available to the disadvantaged, and the style of life in low income neighborhoods are major causal factors which may overshadow problems of inadequate education and skill.

Appendix

Quantitative Analysis of Worker Stability in the Low Income Labor Market

It has been argued that employment instability is the salient feature of the low income labor market. Instability, however, is not characteristic of all disadvantaged workers, nor are advantaged workers completely free from turnover. For example, national data indicates that two-ninths of the poor household heads worked full time in 1966.[1] Moreover, studies of labor mobility show that turnover afficts a high proportion of teenagers and new entrants into the labor force regardless of their socio-economic badkground.[2]

Data available on low income workers in Boston indicate that instability. much of it voluntary, varies systematically with the characteristics of both workers and jobs.[3] Cross classifying the termination rates by age and wage rates, for example, shows that adults tend to be more stable than younger workers, and that turnover rates tend to be lower on better paying jobs.

To examine the dimensions of turnover somewhat further a multivariate model was developed for analyzing the work histories obtained from the Boston manpower study.[4] In the absence of an ideal measure of turnover, the dependent variable employed in the model is length of tenure on previous job. The independent variables are: (1) Wage rate of previous job, (2) Age, (3) Years of education, (4) Sex, (5) Race, (6) Marital status, and (7) Birthplace. The general model is specified as follows:

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[1] Dorothy K. Newman, "Changing Attitudes About the Poor," Monthly Labor Review, Vol. 92, No. 2 (February 1969), pp. 32-36.

[2] See OECD, Wages and Labor Mobility, op. cit.

[3] See Peter B. Doeringer et. al.; Low Income Labor Markets and Manpower Programs: A Critical Assessment, op. cit..

[4] Ordinary least square techniques were used in estimating the coefficients in the model. The model was applied to a random sample of ABCD's clients during the period September 1967-April 1968, for whom work history data was available.

$$T = a + b_1W + b_2A + b_3E + b_4S + b_5N + b_6M + b_7B + U$$

where

T = Weeks employed on previous job[1]

W = Hourly wage rate of previous job

A = Last two digits of year of birth (beginning with 1900)

E = Years of education

S = Dummy variable for males

N = Dummy variable for non-whites

M = Dummy variable for married

B = Place of birth[2]

The results of this analysis are shown in Table 1. Equation 1 pertains to the entire sample, equations 2 and 3 to the data grouped by age. While the model has low explanatory power, and is least satisfactory in explaining job tenure among young workers, several variables are significant.

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[1] The relationship between age and potential job tenure introduces a bias in favor of the correlation between age and actual job tenure. The maximum value of the job tenure variable has been constrained to 99 weeks to reduce the degree to which a small number of older workers with substantial job tenure could influence the significance of the age variable. About 20% of the pooled sample was affected by this constraint.

[2] The index assumes discrete values from 1-8 according to the following definitions: 1 = Boston, 2 = Other areas in New England, 3 = Mid-Atlantic States, 4 = Southern States, 5 = elsewhere in the United States, 6 = Puerto Rico, 7 = Cuba, 8 = other. There were few instances of persons in category 8.

In all three equations, age has a distinct influence upon job tenure. Since the marital status variable is insignificant in all equations, it would appear that other factors associated with age, such as increasing labor market experience, greater job security, pension rights, and so forth outweigh the financial responsibilities of marriage as factors in determining employment stability for this group. The relatively poorer explanatory power of the model when applied to the sample of young workers suggests that the labor market behavior of young workers likely to be more random than for older workers.

Sex is significant only in equations 1 and 3. Surprisingly, adult females can be expected to have longer job tenure than males. This contradicts the view that females generally have a weaker labor force attachment than males, and probably reflects the importance of the earnings of the female work force in low income areas. For young workers, however, differences in sex do not influence job tenure, indicating common job shopping behavior, jobs security, and labor force attachment among young males and females.

The effect of race differs sharply for younger and older workers. Young non-white workers average seven weeks less job tenure than their white peers, whereas non-white adults can be expected to have fifteen weeks more job tenure than whites. The shorter job tenure of non-white youths is customarily attributed to involuntary turnover, but the Boston data indicates that in a prosperous economy much of the

TABLE I

Weeks of Tenure on Previous Job -- ABCD History Sample
September 1967 - April 1968
(t value in parentheses)

	a	W	A	E	S	N	M	B	d.f.	R^2
Equation 1 Pooled Sample										
Estimated Coefficient	72.64	4.83	-1.23***	.34	-7.34	.64	3.34	1.22	309[1]	.1955***
	(6.08)	(1.57)	(7.49)	(.47)	(1.82)	(.15)	(.82)	(1.32)		
Equation 2 Young Workers (16-25)										
Estimated Coefficient	54.01	-2.93	-.86**	1.56**	-3.15	-7.59*	2.68	2.14***	178	.1030
	(2.34)	(.78)	(2.23)	(2.14)	(.93)	(1.73)	(.54)	(2.35)		
Equation 3 Adult Workers (26-68)										
Estimated Coefficient	74.98	10.43**	-1.06***	-1.19	-12.71**	14.14**	1.89	1.45	157	.1310**
	(4.21)	(2.33)	(3.61)	(1.00)	(1.98)	(2.09)	(.31)	(.09)		

[1] Computer program capacity required reduction in sample sizes.

*significant at 10% level
**significant at 5% level
***significant at 1% level

turnover is voluntary, and is concentrated among the young.[1]

Birthplace also influences the job tenure of younger workers. Youths born in Puerto Rico, Cuba, and to some extent, the South, many of whom are non-white, tend to have greater job tenure than their counterparts in Boston. This substantiates the impression of several employers that recent in-migrants to Boston prove more reliable on the job.

A full explanation of the influence of race and birthplace upon job tenure is beyond the scope and competence of this study. Nevertheless, there is room for several interesting hypotheses concerning the aspirations of non-white youths, the value of job security to recent in-migrants to a city, and the possibility of cultural differences in attitudes towards work and job changing.[2]

Education level is another variable positively related to job tenure among young workers. Education may contribute directly to habits of stability, or it may improve opportunities for employment in satisfying jobs which discourage turnover. It may also be that the educational system acts as a screening device for distinguishing between stable workers and those prone to "dropping out," be it from school or work.

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[1] See, for example, Samuel Saben, Occupational Mobility of Employed Workers (U.S. Department of Labor: Bureau of Labor Statistics, 1967), Special Labor Force Report No. 84, p. 35, and Lowell E. Gallaway, Inter-industry Labor Mobility in the United States, 1957 to 1960; U.S. Department of Health, Education, and Welfare, Social Security Administration, Research, 1967, Report No. 18, pp. 88-89.

[2] Claude Brown's description of the difference between his parents' and his own attitudes towards ghetto employment opportunities is enlightening in this regard. See Claude Brown, *op. cit.*, pp. 278-282.

The wage rate variable is positive and significant only for the sample of adult workers. While it is likely that the influence of wage rates upon younger and older workers is not equivalent when other variables are held constant, statistical problems may also be involved.[1]

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[1] For example, job tenure is only an imperfect proxy for turnover rates, so that the two sources of data are not strictly comparable. There are also problems of collinearity. To some extent, the other independent variables in the equation can be used to explain wages rates as well as job tenure. Moreover, there is a problem of simultaneity. Since the causality between wage rates and job tenure presumably works in both directions, the observed coefficient overestimates the true coefficient.

CHAPTER IX

CONCLUSIONS

The basic purpose of this book is to develop the concept of the internal labor market and to demonstrate some of the ways which it can be usefully applied to various areas of concern for federal manpower policy. Part I emphasize that internal labor markets are the critical units within which decisions are made with respect to employment, wage determination, and training. In seeking to understand the operation of the internal labor market, the the principal concern has been with the formal and informal processes governing the employment relationship, and with the various forces which influence them. The availability of workers on the external labor market, the type of technology, the costs of turnover to the employer, the value of the internal labor market to the internal work force, product market considerations and customs were identified as key factors influencing internal manpower decisions. These decisions, when aggregated, are a major factor determining the structure of wages, the level and composition of employment, and the job content of the economy.

The central theme of the second part of the book is that differences between the skills and abilities of the labor force and the requirements of jobs are reconciled through a series of instruments which are controlled within the internal labor market. These instruments--recruitment procedures, training, compensation, and the like--exist because a number of functions conventionally identified with the competitive labor market have been internalized in the enterprise.

These instruments, individually and collectively, constitute a series of labor market adjustment processes by which the internal labor market adapts to changes in both production techniques and labor market conditions.

In this concluding chapter, an attempt is made to bring to bear the analytical apparatus developed in the preceding chapters upon a series of labor issues which have been the concern of government policy. Five problems are considered: (1) Efficiency, job security, and equity in the internal market, (2) unemployment and inflation, (3) manpower programs, (4) special programs for the dual labor market, and (5) manpower planning.

I. Efficiency, Job Security, and Equity

Efficiency

The general presumption of neoclassical theory is that the most efficient economic system is a highly competitive one. Institutions like the internal market, which insulate workers and jobs from the direct competitive pressures of the external market are thus looked upon with considerable suspicion. A parallel view is shared by many managerial personnel who find at least some of the rules which define and govern the internal market to be burdensome, restrictive, and costly.

The theory developed in Chapter II to explain the origins of the internal market and the determinants of internal market structure does not support the presumption of inefficiency. It was argued in that chapter that the internal market was derivative of three factors: the value to the labor force of the security and advancement which it offers, the savings to the employer from the reductions in labor turnover which internalization provides, and the efficiency of such a market in the recruitment, screening and training of workers. These factors are not generally recognized in the theories from which the efficiency of competition is conventionally derived. Where these factors are present, however, internal markets may constitute an improvement in the efficiency of the enterprise and perhaps for the economic system as a whole. Whether or not efficiency increases depends upon the degree to which benefits to the work force detract from the technical efficiencies which internal markets provide. Alternatively, the definition of efficiency might be enlarged to include factors such as equity at the work place, in which case the argument for internal markets being efficient institutions is strengthened. Efficiency in the narrow economic sense, however, is conditional upon the net economies in recruitment, screening, and training, provided by the internal labor market and by the effectiveness with which the costs of replacing workers are reduced by limiting turnover.

Job Security and Equity

In many cases, the employers' interest in an efficient internal labor market structure coincides with workers' interests in job security and equitable administration of work rules. When this occurs, the forces determining internal markets reinforce one another and there is no conflict between efficiency and employee interests. Despite the reduction in competition implied by the internal labor market, efficiency is not impaired.

In other cases, however, the economic efficiency of the internal labor market may be counterbalanced by rules designed to increase the job security or equitable treatment of the internal labor force beyond the point that employers would consider optimal in terms of efficiency. Indeed, the primary purpose of these rules is often to protect the internal work force when its interests are in conflict with the employers' desire for efficiency.

The extent to which efficiency is disturbed when such conflicts arise depends both upon the ability of the internal market to support inefficiency without being destroyed by more efficient competitors and upon the bargaining strength of the internal work force. Investment in fixed labor costs and reliance upon on-the-job training endow individual workers with bargaining power through the threat to quit or to refuse to participate in the training process. Where such bargaining power is strong, the more likely it is, *ceteris paribus*, that the internal labor market will contain economically inefficient rules.

Even internal markets which were efficient at their inception may become less so over time, regardless of worker pressure. Internal wage and allocative structures are the focus of custom and custom imparts a rigidity to the internal labor market that inhibits its responsiveness to economic forces. Moreover, the more successful an internal labor market is in enhancing efficiency by reducing turnover, the more stable is the work relationship, and the more likely it is that customs will develop.

Finally, wherever unions are a party to the determination of the rules governing the internal labor market there is an additional probability that conflicts with efficiency will arise. Unions, by solidifying and coordinating the inherent bargaining power of the internal labor force, may increase the weight given to employee interests in the internal labor market. While it is difficult to demonstrate that this bargaining power can be readily translated into wage increases, it is clear that unions have had a substantial impact over the allocative structure of internal labor markets and have contributed to the development of equitable administration of work rules.[1] The growth of union referral systems, the increase in seniority as an allocative rule, restrictions on layoffs and elaborate grievance procedures all testify to this result. Moreover, even where unions have not exerted any direct influence upon work rules, the codification of such rules which normally accompanies union organization reinforces the operation of custom described above.

In summary, internal labor markets can provide a more efficient form of market organization than can competitive labor markets whenever fixed labor costs and economies of recruitment, screening, and training are present. This efficiency, however, is subject to being reduced by the opportunity which internal labor markets provide to the internal work force to express its interest in rules which enhance job security and equitable treatment within the market.

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[1] For a treatment of the impact of unions on wage rates see Lewis, *op. cit*.The impact of unions on work rules and upon efficiency is discussed at length in Slichter *et al.*, *op. cit*. and in Bok and Dunlop, *op. cit*., Ch. 10.

II. Structural Unemployment and Inflation

1. Structural Unemployment

In the past decade, labor market analysts have evinced two concerns about the process of adjustment between the requirements of jobs and the characteristics of the labor force. The first of these, called the structuralist or the structural imbalance hypothesis, was that adjustment would not occur at all. The second was that it would entail significant price inflation.[1]

The structuralists argued, essentially, that in the late fifties, an important change occurred in the requirements of jobs relative to the composition of the labor force. The change was most often attributed to new technologies and, hence, the argument was frequently associated with automation, although some observers placed greater emphasis on shifting the geographic or age composition of the labor force. The result, however, was the same--the existing work force was simply unable to fill the remaining job vacancies and, for this reason, unemployment could not be reduced. The corollary was that any attempt to reduce it through aggregate policies would simply generate inflationary pressure without increasing employment. A variety of evidence on both the micro and macro level was introduced to support this hypothesis. Particularly emphasis was placed upon an alleged increase in the pace of technological change, especially in manufacturing, upon the increasing education and skill requirements of jobs generally and of new relative to declining technologies, in particular, and upon a shift in the age and educational composition of unemployment.

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[1] For a summary of this debate see: Barbara Bergmann and David E. Kaun, Structural Unemployment in the United States (Washington: U.S. Department of Commerce, Economic Development Administration, 1967). See also Edward Kalachek and James Knowles, "Higher Unemployment Rates, 1957-1960," Structural Transformation or Inadequate Demand, Joint Economics Committee, 87th Congress, 86 Session, 1961. Also Charles C. Killingsworth, "Structural Unemployment in the United States" in Jack Stieber, ed., Employment Problems of Automation and Advanced Technology (London: Macmillan, 1966), pp. 128-156. Council of Economic Advisors, Annual Report (Washington: 1962), pp. 39-49.

The experience with the tightening labor market over the course of the decade has demonstrated that the fears of the structuralists were misplaced. The society was able to reduce unemployment to levels comparable to those attained in the early postwar period. Observers appear, therefore, to have seriously misinterpreted the data available to them. A recognition of the internal labor market and the process through which it adjusts to external market conditions suggests why such a misinterpretation occurred.

On the micro-economic level, there appears to have been a confusion between the rate of technological change and job displacement, on the one hand, with the rate of employment displacement, on the other. The latter is highly sensitive to overall economic conditions, particularly in the blue collar manufacturing industries, such as autos and steel, in which fears of structural unemployment were centered. Their sensitivity is, in large measure, attributable to the nature of the internal labor market. In blue collar manufacturing, the internal market does not provide absolute job security: displaced workers are guaranteed employment only so long as there is a job vacancy within the internal market. Hence, they are protected from technological change only if the elimination of their job coincides with a job vacancy created by attrition, an expansion of production, or the like. Such a coincidence is more likely when the market as a whole is expanding. Thus, the same rate of technological change and of job displacement will create more employment displacement in a relatively depressed period like that of the late 1950's and early 1960's than in more prosperous periods.

The impact of the increased employment displacement from internal markets was no doubt aggravated in the period by the higher overall unemployment rates which made it more difficult for those displaced to find a new job. Hence, not only did depressed market conditions increase the rate of displacement from internal markets, it probably also acted to increase the adjustment period for those workers who were displaced. These effects, however, are to be distinguished from changes in the rate of technological change or job displacement and could occur quite independently of them.

The structuralists appear also to have misread the micro-economic data. They were impressed by the concentration of unemployment among the low skilled and the poorly educated which they interpreted as a product of the shift in the skill requirements of job. In this, they failed to appreciate the way in which the recruiting, screening, and training adjustments which employers make in response to external market conditions affect the composition of unemployment. A loose external market permits employers to utilize the most inexpensive screening devices such as educational levels, age and race. Therefore, during periods of high unemployment, superficial demographic characteristics are used to define a much higher proportion of the unemployed than during periods of low unemployment. In a tight labor market, employers move toward more expensive recruiting techniques that spread labor market information to previously isolated groups, and develop more sophisticated screening procedures. Thus the demographic categories in which labor force data are collected no longer coincide with employer screening criteria.

This is not to argue that all of the adjustments in hiring practices which lead observers to the structural hypothesis in the early 1960's reflected market conditions. There were indeed certain long-run changes in job requirements which undoubtedly would have occurred even in a period of unchanging market conditions. These too, however, must be interpreted in the light of the instruments of adjustment which connect the internal to the external market. When this is done, the implications for structural balance are no longer readily apparent. For example, there has been a long run increase in the average education attainment required for hiring. This, however, does not necessarily reflect a change in job content. It may simply be indicative of the fact that education is used as a screening device to select a group of people who are thought to possess a common set of attitudes and behavioral traits.[1] As educational attainment rises throughout the society, it will be necessary to increase education requirements in order to draw from the same stratum of the labor market. Similarly, in the case of new technologies, it is possibly true that, on the average, jobs associated with new technologies tend to have higher qualifications in terms of formal training and edcuation than the jobs associated with the older technologies which the new jobs replace. This need not, however, indicate a long term rise in requirements as the qualifications of the new jobs tend to decline over time as they become integrated into the structure of the internal market. For example, the initial supply of workers for a new technology may be drawn from the external market and have high levels of formal training. But over time, employers typically experiment with new recruiting procedures, screening procedures, and hiring criteria, and a decline in qualifications occurs. At the same time, on-the-job training sequences tend to form around new technologies. Hence, the formal qualifications required for a job tend to go through a life cycle, starting high and gradually declining to the much lower equilibrium level. Any comparison of the newest and the oldest jobs will often show a radical shift in education requirements, but the relevant question is whether that shift has increased over time.[1]

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[1] See Ivar Berg, *op. cit.*

The ability of the internal labor market to overcome structural skill imbalances does not imply that technological change poses no problems of unemployment. The internal labor market has certain inherent limitations in providing job security for workers whose jobs are displaced by new technologies. First, the job security must be provided within each internal labor market and cannot ordinarily be extended to include other internal markets. Moreover, because employer interests in efficiency favors narrow seniority districts, on-the-job training, and enterprise-specific skills, the potential for job security is, in many cases, further reduced to particular seniority disdistricts. This is in conflict with worker interest in receiving general training which would increase the number of employment opportunities to which they have access should they be displaced by technological change.[2]

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[1] Michael J. Piore, "Technological Change and Structural Adjustment in the Labor Market," unpublished doctoral dissertation, Harvard, 1966, pp. 139-147 and pp. 188-189.

[2] See James G. Scoville, "A Theory of Jobs and Training," Industrial Relations, October 1969, pp. 36-53.

Finally, in making a technological change the employer has an incentive to take into account only those costs of worker displacement for which he is responsible under the rules of the internal market. The innovating employer has no financial obligation for workers in other internal markets whose employment is affected by his actions. Nor does he face costs when displacing "temporary" workers from his internal market. This implies that the internal labor market is not a complete substitute for other arrangements such as unemployment compensation or full employment which enhance economic security. It also suggests a range of policies aimed at broadening the scope of training, limiting the right of enterprise to close without warning, and facilitating the transfer of displaced workers.

Adjustment costs

Given the instruments of adjustment within the internal labor market, especially on-the-job training, persistent structural skill imbalances in the economy appear unlikely except where special restrictions upon the adjustment process exist. Most difficulties in labor force adjustment which are encountered seem largely attributable to problems of search and experimentation and to the length of time required to implement the adjustment instruments within the internal labor market. Developing effective techniques for adjustment can be a slow process for the internal labor market as various instruments are tried, and often rejected, until the appropriate mix is discovered. Such an approach introduces lags into the adjustment process which can make it appear, initially, to be working ineffectually, thereby overstating the seriousness of labor market imbalances.[1]

Having argued that much of the evidence used in support of the structural hypothesis failed to appreciate the adjustment processes occurring within internal markets, the findings of Chapter VI should be emphasized. They suggest that the character of technological change as it affects the requirements of jobs is only weakly controlled by the neoclassical mechanisms of relative wages or, more broadly, labor costs. If the economy has managed to avoid structural bottlenecks, therefore, it is due to the adaptability of the labor force and the effectiveness of the instruments through which the employers adjust to the external market conditions. While it is conceivable that absolute structural bottlenecks may still occur, the more likely impact of technological change is to raise the cost of adjustment to it. Ideally firms should anticipate these costs and they should be built into the calculations that justify the technical change. But it appears that in fact they are not generally anticipated, even when they are borne by the firm in which the change is introduced. Moreover, as noted above, when the effect of the change is to displace workers from the enterprise in which they are introduced or to displace workers in other competing enterprises, the employer making the change has little or no incentive to anticipate adjustment costs at all. Since technological change is a continuing phenomenon, a certain allowance for adjustment to it is built into the cost structure of the economy. Should adjustment costs rise above that level, however, the effect would be to aggravate the conflict between full employment and price stability. In this, it is part of the broader problem of the inflationary impact of internal market adjustment and is best discussed under that heading.

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[1] The view that the internal adjustment process permits society to avoid many problems of long term labor market imbalances does not imply that there are no obstacles to this process, or that conflicts with other economic or social policies do not exist. Where restrictions are placed on certain instruments of the adjustment process; such as licensing requirements, civil service regulations, or negotiated work rules; this process may be frustrated. When the elimination of discrimination is a goal, the incentives of efficiency and the inhibitions of custom at the work place may work at cross purposes with this objective.

2. Inflation

If the concern over structural unemployment with which the nation began the 1960's proved unfounded, the concern with inflation has not. The low levels of unemployment attained in the latter part of the decade have been accompanied by significant wage and price inflation, and the problem of reconciling full employment and price stability--the "Phillip's Curve" dilemma--has become the central problem of economic policy in the late 1960's, as it was in the late 1950's.

There has been a trend in the literature on the Phillip's Curve to move from explanations based upon market power of unions and companies to explanations based upon labor market behavior.[1] Some of these have focused on job search, job vacancies and labor market flows. Few, however, have considered the internal labor market and the internal adjustment process.

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[1] For a summary of this literature, see Edmund S. Phelps, Microeconomic Foundations of Employment and Inflation Theory (New York: W.W. Norton and Norton, Inc., 1970).

An understanding of the internal labor market does not provide a solution to this policy dilemma, but it does suggest a somewhat different perspective from previous theories. First, one possible source of the inflationary pressure accompanying reductions in unemployment are the adjustments which internal markets make to the external market. As indicated in Chapter V, the amount of the adjustment, and the associated adjustment costs, are likely to rise in tightening labor markets as employment expands, turnover increases, and the average "quality" of job applicants declines. Moreover, these costs are a function not only of the level of unemployment but the rate of change of unemployment as well. When the internal market is under pressure to fill vacancies quickly or to discover new adjustment techniques, as when the labor market tightens quickly, the more costly adjustment instruments are likely to be brought into play. As with any component of production costs, these costs can be translated into price increases under the appropriate circumstances.[1]

Second, some adjustment instruments appear capable of generating continual cost increases of a kind which would account for observed relationships between the level of unemployment and the rate of inflation. The adjustment instrument most likely to operate in this way is the wage rate. The procedure of setting plant wage levels through a community wage survey makes it likely that wage increases will be followed by other plants in the community, so that the attempt of one firm to adjust to the market in this way will set off a wage spiral among many of the enterprises in the community. Moreover, because wage structures are relatively rigid, adjustments in entry wages, exert leverage upon the entire wage structure of each enterprise. Since such wage increases will be occurring in a generally prosperous economy, the supply of many kinds of labor is apt to be highly inelastic and wage adjustments will not only set off a wage spiral, but are also likely to have little impact in alleviating the underlying scarcity.

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[1] This pattern of cost increases postulated is consistent with studies showing that changes in the price level are correlated with both the level and the rate of change of the level of unemployment. See, for example, George L. Perry, Unemployment, Money Wage, Rates and Inflation (Cambridge: The MIT Press, 1966).

It is thus possible to develop a theory in which the Phillip's Curve is generated by a series of uncoordinated actions of individual firms. One firm trying to adjust to a tightening labor market through changes in its entry wages, would set off a chain reaction in the community spreading through the wage survey mechanism from one plant to another. The changing entry wages would also spread through each enterprise's internal wages structure and this too would be propagated externally by the community wage survey. By the time the effects of the initial move had been dissipated, the firm would again find itself short of labor and react by initiating a second wage round.

Adjustments through most other internal instruments, however, tend to alleviate the underlying labor scarcity. Thus, in a tight labor market, reductions in hiring standards, changes in screening procedures,

and training, will all act to increase the supply of labor. Job redesign, job vacancies, and subcontracting all serve to reduce or demand. Whether, in the aggregate, such policies can sufficiently reduce labor scarcities and alleviate market pressure depends upon conditions in the sectors of the labor market from which the new supply is drawn or to which the demand is shifted. If the adjustment process is one in which high wage sectors drain labor from or transfer work to lower wage firms which face an even tighter market little will be accomplished. If the result is to equalize the incidence of unemployment and to provide substantial training, the security will be eased.

The public policy goal implicit in the foregoing discussion is that firms should be encouraged to adjust to tightening labor markets through non-wage adjustment instruments and that these instruments should be directed at sectors of the economy with relative labor surpluses. This could be accomplished through enterprise subsidies for screening, recruitment and training, or by government programs which performed the same functions at a lower cost than the enterprise.

It should be noted, however, that the same forces which make adjustments to external market conditions through wage changes unattractive to society also make them unattractive to the individual enterprise. Most managers are aware of the tendency for wage adjustments to set off a community wage spiral. Even where they are not deterred by this concern, they are generally discouraged from excessive reliance upon entry wage adjustments by the leverage which they exert upon the internal wage structure of the enterprise.

What is true of wage adjustments is true of other instruments as well, there is an advantage to the firm as well as to the society of drawing labor from and shifting work to those sectors of the labor market where supply is least constrained. This suggests a second explanation of the Phillip's Curve, that *primary* internal markets attempt to adjust to labor market shortages through non-wage instruments which shift product and labor demand to the *secondary labor market* where the internal wage structure is less extensive or noneixstent and where there is consequently little deterrent to wage adjustments. This would imply that the key to the Phillip's Curve lies in programs directed at the secondary sector, and perhaps in its elimination. An extensive study of adjustments in the low wage labor market is reauired to evaluate this hypothesis.

III. Government Sponsored Manpower Programs and Labor Force Adjustment

1. The Adjustment Process

In the preceding section it was argued that government sponsorship of the labor force adjustment processes now provided primarily by internal labor markets might reduce inflationary pressures. In the remainder of this chapter, the role of government intervention in the labor market is examined further.

Training

In analyzing government sponsored training programs a distinction should be made among 1) general training in verbal and mathematical skills, 2) training in occupational skills common to many enterprises, and 3) training in occupational skills specific to a single enterprise or industry. Economic efficiency dictates that training should be provided by the enterprises which utilize it, unless there are external economies or diseconomies associated with the training process.

For training that is general to the economy, or to a number of enterprises, both types of external effects may occur. First, there may be significant economies of scale in training which can be realized through mass training programs. Such programs are only within the training capability of very large enterprises or multi-employer associations. Second, if general training is provided by an individual enterprise, labor turnover may transfer the skills to another enterprise which has not contributed to their financing. For training that is enterprise specific, however, these external effects are negligible.

The case for governmental programs to provide general verbal and mathematical training is strong. The usefulness of this training is not limited to certain industries, and it readily lends itself to identifiable programs which effectively utilize large scale instruction methods. While enterprises do appear willing to supply some general training when such skills are unavailable on the external market, it is often excessively narrow. Employees, for example, may learn to read only those symbols and to perform only those calculations required by their present jobs. It does not, therefore, enhance labor force adjustment beyond the immediate confines of the enterprise and it may even hamper further adjustment, should the narrow training encourage learning habits which later impede a worker's ability to acquire additional training.

The analysis of internal labor markets suggests that the responsibility training for skills and abilities which are enterprise-specific, however, should rest with the enterprise. The structure of the internal labor market makes it difficult for workers outside the enterprise to gain direct access to many jobs utilizing these skills even if trained to perform them. A more important consideration is that training on the job is probably the most efficient method of instruction for most enterprise-specific skills. Where such training is less efficient, institutionalized procedures already exist for transferring such training to equipment vendors or to the local schools.

Considerations of economic efficiency suggest that the enterprise should not only control the process of training in enterprise-specific skills, but should pay for it as well. Specific training yields, by definition, few external economies, and hence its costs should properly be absorbed by the enterprise, thus serving as an incentive to economize the scarce resources involved. If the inflationary consequences of enterprise-financed training are significant, however, and the government can absorb the costs in a less inflationary manner, these economic considerations may be outweighed.[1] In addition, government concern with improving employment or income opportunities for minority groups or for the disadvantaged may argue for subsidizing enterprise adjustment costs for these groups, independent of efficiency considerations.

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[1] The additional problem of disturbing competitive cost relationships among firms should be recognized. In highly competitive industries, where labor costs are a high proportion of total costs, the subsidization of training expenses, for example, might provide new enterprises with a critical competitive advantage over established enterprises. A prime illustration of this problem is the concern of the needle trades unions that federal training funds will be used to finance "runaway" shops.

To reduce inflationary pressures of adjustment cost and to encourage the use of adjustment instruments which minimize the conflict with price stability, the government should support enterprise-specific training through a system of subsidies to employers, much like that embodied in the JOBS program. Such subsidization would have the advantage of preserving the existing efficiencies of employer control over training. The major obstacle to such a system is administrative, the training costs being largely indirect and difficult to quantify. This suggests that the government should be less concerned with specifying formal training procedures and should concentrate on results, leaving each enterprise to define its own training strategy.

Training in more general occupational skills-maintenance mechanics, highly skilled machine operations, and the like--presents an intermediate situation between that of general literacy training and specific training. Like literacy training, it tends to be excessively narrow when provided by the enterprise and may, therefore, yield unnecessarily high adjustment costs in the long run. On the other hand, like enterprise-specific training, it can be acquired on the job, and jobs utilizing such training may not be directly accessible from the external labor market. Given these hybrid characteristics, a system of Federal subsidization similar to that for enterprise-specific training, but designed to encourage broader training programs as well as to absorb training costs, would be most appropriate.

Recruitment and Screening

The same logic applied to the evaluation of governmental training programs can be extended to governmental manpower policies in the field of recruitment and screening. The Government should screen and recruit workers with characteristics of general interest to employers, while the cost of recruiting and screening for relatively enterprise-specific characteristics ought to be left to the enterprise, unless there are significant economies of scale.

Again, however, other considerations may favor more extensive governmental recruitment and screening. For example, a number of persons currently considered to be disadvantaged may lack access to high wage employment, not so much because they cannot perform the available work, but because they are difficult, and expensive, to identify under traditional screening procedures. It has been suggested, for example, that a major contribution of the MDTA institutional training programs has been to screen groups of workers not possessing suitable formal educational qualifications, in order to identify a subgroup possessing such qualities as reliability and trainability for which employers use formal educational requirements as a proxy. While this evaluation no doubt understates the contribution of governmental training programs, the programs probably make part of their contribution in this way. To the extent that they do so, federally supported screening programs would be a less expensive substitute for training.

2. Manpower Programs for Low Income Labor Markets

The distinction between secondary and primary employment suggests two alternative approaches for public policy: (1) programs to accelerate the transition from secondary to primary employment and (2) programs to improve the quality of secondary employment. If linkages between primary and secondary employment exist then the former programs are likely to be most effective. If there are serious discontinuities between primary and secondary labor markets, the latter policy will be preferable.

Federal manpower policies have followed the former approach, operating under the assumption of the simple queue theory of the labor market. This interpretation points first to aggregate demand policies which expand employment along the queue and second, to programs of training, orientation to work, and job information which will advance the disadvantaged along the queue. Employment instability, poor work habits and skill deficiencies are seen as problems of labor supply, to be corrected by modifying worker traits. The process of adapting disadvantaged workers to primary employment is seen as involving some or all of the following steps: (1) Outreach or recruitment, (2) Screening and selection, (3) Remedial education and training, (4) Placement, (5) Orientation to work and to specific job requirements, (6) Counselling and supportive services. The particular combination will depend upon the type of disadvantage encountered and the kind of employment involved. Some of the more important steps are discussed below.

Recruitment and Labor Market Information

There is little evidence to suggest that information with respect to secondary employment is insufficient. Disadvantaged workers, at least in urban areas and in periods of high employment, seem well aware of job opportunities. In fact, the high turnover that is characteristic of the secondary labor market probably contributes to a higher overall level of informal labor market information than in the primary market. This information, however, is heavily biased toward secondary jobs and expanded labor market information about primary employment opportunities, may be useful in facilitating transition to the primary labor market, providing other barriers to employment do not exist. Labor market information programs may also be sufficient for assisting the handicapped and for remedying teenage unemployment by expediting exposure to work while leaving turnover to diminish with age and work experience. Government resources in this area should be directed more at increasing the amount of information on primary jobs, relying upon informal information channels to bear the major responsibility for secondary jobs.

Training

Current programs for improving the competitive position of the disadvantaged through institutional training programs should be viewed with some skepticism. Such programs neglect both the importance of labor force adjustment within the internal labor market and the distinction between primary and secondary employment. They are usually too short and lack the sophisticated curricula necessary to provide a broadly marketable skill. Instead they provide little more than a superficial familiarity with a limited range of equipment, materials, and operating procedures. Even worse, they may instill work habits in the trainees which are inconsistent with enterprise practices and which have to be unlearned. Finally, such programs are often directed at labor scarcities in secondary labor markets rather than at upgrading the disadvantaged into primary employment. As with many labor market information programs, the result is to reinforce the operation of the secondary market rather than to open primary employment.

Orientation to Work

The problems of instability and poor work habits among adult workers has generally evaded solution. Some training programs have been able to demonstrate low turnover, especially where the training environment was very attractive or when the training stipend loomed large relative to alternative sources of income.[1] There has not been any satisfactory demonstration, however, that this stability has carried over to post training employment. Moreover, to the extent that turnover can be traced to the quality of work available in the secondary labor market, programs for modifying workers' attitudes are misdirected.

Referral to primary jobs does seem to encourage stability, but this poses the basic conflict inherent in the queuing behavior of the primary labor market. Primary employers normally seek to hire advantaged workers and have adopted wage scales and other labor market adjustment instruments which permit them the privilege of selectivity. Successful modifications in selection priorities to hire the disadvantaged is likely to be associated with longer and more costly labor force adjustment process. Programs to employ and retain disadvantaged workers in primary internal labor markets may therefore involve temporarily overlooking, or treating more leniently, infractions of work rules and the temporary acceptance of production norms which are at variance with customary standards. This, however, establishes dual standards of performance: one for the disadvantaged and one for the incumbent employee.

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[1] See, for example, Peter B. Doeringer, et. al., Low Income Labor Markets... op. cit.

Work rules are a compromise between the loose performance standards and less stringent discipline favored by the incumbent work force and management's interest in tighter standards. The incumbent work force in primary internal labor markets normally insists upon uniform application of all rules and penalties and any deviation from uniformity violates fundamental principles of equity. Since many work rules are defined by precedent, deviations from prevailing standards tend to establish new precedents to be applied uniformly in the future.

The labor force adjustment process within the internal labor market typically involves short-term concessions for the new hire. If additional or longer term concessions are granted to the disadvantaged worker, there is the ever present danger that they will be extended to the entire internal work force with implications for efficiency which reach far beyond the disadvantaged employee.

If uniformity of concession is not granted, then problems of backlash may be intensified, especially if similar concessions have been the topic of collective negotiations, or have been denied earlier to incumbent employees. Concessions to the disadvantaged under such circumstances are regarded as special favoritism and in violation of the whole system of equity which primary employers and unions have sought to establish.

Typical of the issues at stake is the probationary period. Because work habits are learned, much like any other work skill, it may be necessary to seek an extension of the probationary period if disadvantaged workers are to be retained in primary internal labor markets. Because probationary employees have no access to the grievance procedure, the work rules applied to them do not set precedents for incumbent workers. The probationary period is a signal to incumbent employees that special consideration is to be accorded to the new hire during which time the employer retains the right to summary dismissal. The prevailing probationary period, however, represents a compromise between management's desire to maximize the period in which it is free to deal with workers unhampered by union limitations, and the union's view probation as a threat to collective bargaining. Even when both the employer and the union have a strong commitment to hiring disadvantaged workers the issue is difficult to resolve. When the commitment is weak, such programs may become a pawn in larger negotiations. [1]

The recent federal programs to utilize the labor force adjustment capabilities of the internal labor market to facilitate the employment of the disadvantaged is also an outgrowth of the queue theory. These programs, however, have taken too little cognizance of the problems of poor work habits and their relationship to secondary employment. The resources of these programs have not been concentrated upon opening up new primary employment opportunities or upon overcoming poor work habits by emphasizing upgrading and worker retention.

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[1] Michael J. Piore, "On the Job Training in a Dual Labor Market," in Arnold R. Weber, Frank H. Cassell, and Woodrow L. Ginsburg (eds.), Public-Private Manpower Policies (Madison, Wis.: Industrial Relations Research Association, 1969), pp.110-113.

IV. Special Programs for the Dual Labor Market

The dual labor market concept, in contrast to the queue theory of the labor market, points to a broad range of policy areas which are not normally thought of as part of manpower policy. For example, racial discrimination, disparities in union organization, and differences in the impact of social insurance taxes operate on the demand side of the market to strengthen the distinction between primary and secondary jobs. Policies directed at modifying these forces will presumably reduce the differences between the two markets and facilitate inter-market labor nobility. On the supply side of the markets, some of the proposals for welfare reform along the lines of the negative income tax are conducive to greater accommodation of the secondary labor force to work discipline. Reforms aimed at stabilizing illicit activities and reducing the competition which they pose to legitimate employment should operate in a similar fashion.

1. The Elimination of Barriers to Primary Employment

Racial discrimination is a significant barrier to the movement of minority groups from secondary to primary employment. The elimination of the effects of racial discrimination is therefore essential to the upgrading of minority groups and the ultimate elimination of income and employment inequality.

Equal access to the full range of jobs in primary internal labor markets is a key element in achieving this goal, but providing such access will often raise the cost of labor force adjustment in the internal market and will impair the job security of the internal labor force as well. The hiring process for internal labor markets is based upon the probabilities of groups of workers having certain performance levels on the job. Thus race, education, or aptitude test scores are typically used as statistical screening devices because they are presumed to correlate with worker traits such as reliability and ability to learn that are not readily measured. Reducing the racial bias inherent in such screening devices implies either the development of more sophisticated screening procedures or the replacement of screening by a random hiring process. Either option will raise the cost to the employer of acquiring a work force. Similarly, changing recruiting patterns to increase the number of minority group applicants will involve additional costs for the internal market. Where internal discrimination is to be remedied, both the employer and the incumbent work force may experience costs. Employers must retrain workers and perhaps modify internal allocative criteria. Incumbent workers may experience the costs of redistributed job security or promotion opportunities.

In many respects, providing equal employment opportunity is analogous to other types of labor market adjustment which pose costs for the internal labor market. The costs of eliminating entry discrimination are like the costs of adapting to tightening labor markets. Remedying internal discrimination involved adjustments having effects similar to those encountered when adapting to technological change. This suggests that public and private manpower programs can, by relieving cost constraints on both employers and incumbent workers, provide an important adjunct to other efforts to overcome discrimination. For example, there are desirable jobs within the internal labor market in mobility clusters containing maintenance, clerical, and technical work which represent additional promotion opportunities, provided that appropriate training arrangements are established. Filling such jobs internally can expand the number upgrading slots, thereby facilitating the process of merging seniority ladders and accelerating minority groups advancement.

Where employment is declining and additional internal promotion vacancies cannot be made available in great numbers, a more ambitious program could be developed to provide employees in the lower paying, and typically Negro, jobs with training in basic English and mathematics, vocational skills, and clerical or technical skills which could then qualify them for a broader range of jobs with other employers in the community.

The pressure of civil rights activities in the employment field has also generated interest among employers and unions to participate in manpower programs. Such programs are valued not only for the trained minority group workers which they yield, but[1] for the tangible evidence of affirmative action which they provide.

2. Labor Legislation

There are also a range of programs which affect the operation of the secondary labor which will be important for those who must continue to fill the poorer jobs in the economy. Improvement in the income guarantee and work incentive aspects of the welfare system will make it less risky for workers to leave welfare and enter the secondary labor market. It should also make it easier for disadvantaged workers to invest in the additional job search and to face the additional risk of termination

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1 See Peter B Doeringer and Michael J Piore; "Equal Employment Opportunity in Boston", Industrial Relations, May 1970

which are involved in obtaining primary employment. Collective bargaining could be encouraged in the secondary labor market through amendments to the Wagner and Taft-Hartley Acts as a means of strengthening internal labor markets in the secondary sector, thereby making secondary work conform more closely to primary work. The coverage of minimum wage legislation could also be extended and made uniform in all employments as the first step in directly improving compensation levels in the secondary labor market.

3. Public Employment

Proposals for the government to employ the disadvantaged in public works jobs paying the minimum wage are based upon the premise that many of the disadvantaged are otherwise permanently unemployable. Analsysis of the secondary labor market, however, suggests that the number of urban "unemployables," for whom sheltered work would be an efficient remedy, is not great during periods of full employment. Public employment programs are likely to expand the demand for low wage labor in the secondary labor market, which already behaves like a tight labor market, without initiating any corrective mechanisms necessary to overcome instability and to upgrade workers to primary employment. Moreover, a guarantee of work may even aggravate instability on the supply side of the market. Unless such upgrading can be assured, programs directly tied to opening primary employment are preferable.

4. Training for Casual Labor Markets

A number of persons in low income neighborhoods primarily students and women with children, seek part-time employment. These workers, as well as the chronically unstable among the disadvantaged, constitute a casual labor force, whose employment needs are best met by intermittent work. Temporary help agencies provide a ready institution for organizing the casual labor market and for coupling casual employment with intermittent training. Temporary help agencies have well-established connections with the business community and could develop special training programs to improve the skills of disadvantaged workers who hope to remain permanently in the labor market as well as those with more tenuous attachment. Initially, training could be aimed at low-skilled clerical and laboring jobs. On those days when referrals were not available, the disadvantaged could receive training, geared to their own rate of advancement, in lieu of work. The trainees could be referred to increasingly skilled work as their training progressed.

V. Manpower Planning and Labor Force Adjustment

Finally, whatever types of manpower programs it selects, the Government must also identify those sectors toward which they should be directed. To do so, it must both appraise current manpower developments and forecast future trends. The internal labor market and the character of the adjustment process which occurs within it pose serious obstacles to this task.

Manpower data are currently collected in a series of categories that divide the numbers of the labor force into groups on the basis of socio-economic characteristics (e.g. occupation, educational attainment, industrial attachment, etc.). Manpower problems are then largely identified with imbalances between job requirements and the labor force structure as revealed by the distribution of workers among these categories.

The adjustment process, however, is continually modifying the distinctions among jobs and among workers which are implied by these categories. Required worker characteristics are changed through variations in hiring standards and screening procedures; the on-the-job training process involves both the transformation of the work force, and, in the short run at least, the redesign of jobs. The shifts in job design and required worker characteristics are so continuous as to defy any system of analysis dependent upon discrete categories. Moreover, in the case of technological change, the adjustment process involves innovations in these instruments which are virtually synonymous with discovery, and hence are extremely difficult to predict. Present techniques of manpower planning therefore will inevitably underestimate the capacity of the private sector to effect adjustment.

To some degree, the internal labor market, with its potential for on-the-job training and upgrading, provides manpower flexibility and is an alternative to manpower planning. Overtime, sub-contracting and product inventories serve a similar function. Nevertheless, the limits of this flexibility can be reached during periods of continuing economic expansion.

Planning permits public and private manpower programs to be scheduled so as to reduce conflicts with resources needed for production. In periods of stable or declining output, for example, excess capacity in capital equipment or in supervisory resources can be utilised for training at little additional cost. Planning can also reduce the costs of adjustment lags by enabling the employer to initiate long-term adjustment programs in advance of labor market imbalances.

It has been argued in this manuscript that the major Governmental concern with labor market adjustment processes should be with manipulating the processes to achieve cost efficiencies and other objectives of national economic policy. Incentives to minimize adjustment costs are already present in the enterprise's desire for profit and in the decentralized mechanisms coordinating plant skill needs with labor market conditions and with training curricula in the educational system. What appears to be lacking are sources of information about alternative modes of adjustment and sufficient incentives to overcome discrimination and to employ the disadvantaged.

Under present arrangements, each enterprise tends to discover, on its own, the changes in job design, promotion patterns, training techniques, hiring standards, and the like, through which labor force adjustment is effected. Experimentation to hasten the discovery process is inhibited by the difficulties of changing procedures once the labor force becomes accustomed to them and of identifying and controlling adjustment costs. Some sharing of experience occurs through local organizations of personnel managers, various other community institutions, and through industry trade associations.

Although the problems are in many respects analogous to those encountered in selecting new equipment, the channels for communicating information about labor force adjustments are in no way comparable to the trade magazines, exhibitions, and vendors which disseminate information about new equipment. Hence a pooling of information about adjustment techniques through the planning process may be sufficient to hasten the adjustment process and to reduce its costs. Once such systems for pooling information have been developed, the most effective deployment of the relatively small budget which the Federal Government now appears willing to commit to training efforts may well lie in expanding, through the subsidization of experimental programs, the fund of experience with adjustment techniques.